MB30671CS

BASIC MUSIC THEORY FOR BANJO PLAYERS

ILLUSTRATED WITH PLAYING EXERCISES FOR THE 5-STRING BANJO

Online Audio & Video

RICK MCKEON

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Basic Music Theory for Banjo Players

Illustrated with Playing Examples for the 5-String Banjo

by Rick McKeon

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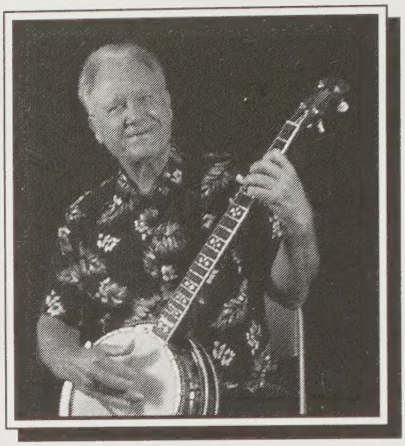

Hi, I'm Rick McKeon. I would like to welcome you to this exciting musical journey! This is a "hands-on" approach to music theory with lots of playing examples for the banjo. I believe you will find this approach informative and easy.

You might be thinking, "How's he going to make music theory easy?" Over the last few decades I have worked with hundreds of students, and I can tell you from experience that, taken a little bit at a time, music theory is easy and FUN!

Each lesson has a limited scope, but by the time you finish the whole book, you will have a good understanding of the basics.

Of course, any single book can't cover everything, so I have tried to choose topics that I think will be helpful for most people at the beginning level. These choices are based on the many wonderful experiences I have shared with my students.

The emphasis here is on Western music - not as in "Country/Western" but as in European and American music as opposed to Asian music. Also, we will focus mainly on music written in major keys as opposed to minor or modal music. I know that leaves out a lot of world music, old-time, and modal sounds, but let's start with the basics first.

Everybody is at a different place in terms of experience and training. If you already have some musical background, don't feel you have to work your way from Chapter 1 through to Chapter 10 in that order. Feel free to jump around and spend more time in those areas that interest you most.

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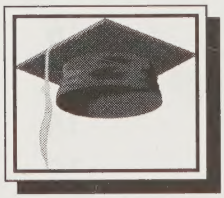
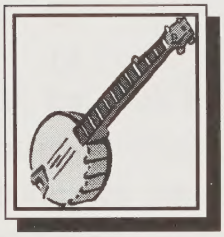
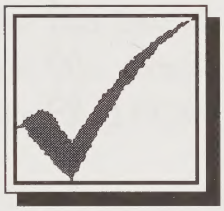
To keep it fun, easy to understand and useful, each chapter has three parts:



1. Explanation of the Topic



2. Playing Examples



3. Review Questions (with answers) to summarize the important points.

We have a lot to cover, so let's get started!
Rick

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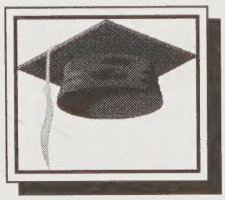
Chapter 1. The Major Scale



1.1 The Major Scale Is the Basis of All Music Theory!

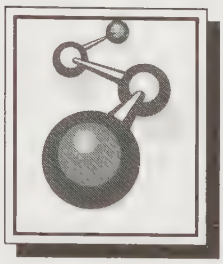
That's a strong statement I know, but once you know the pattern for the major scale, you can figure out the name of any note and you will see why we sometimes end up with sharps or flats in the key signature. Also, you will understand chord construction and chord progressions. Pretty powerful stuff!

1.2 Producing Musical Sounds

What is sound? Well, it's a mechanical vibration that hits your eardrum and produces electrical impulses that go to your brain. OK, that seems a little technical; let's back off a bit.

When you strike a banjo string you start it vibrating. Those vibrations travel through the air and eventually reach your eardrum and start it vibrating at the same frequency. These are called "mechanical waves" because they need a "medium" like air to travel through. Can you hear underwater? Yes, the medium in that case is water molecules.

Can you hear sound in a vacuum? Remember when your high school science teacher put an alarm clock in a bell jar and sucked all the air out? What happened? The alarm clock was still ringing, but as the air was sucked out the sound got quieter and eventually you couldn't hear it. No more air - no more medium - no more sound.



It Takes Molecules

OK, enough of the physics lesson.

Anyhow, things that vibrate produce sound. The faster the vibration, the higher the pitch of that sound. Think about a stringed instrument. Three things affect the pitch:

1. The length of the string.
2. The mass or diameter of the string.
3. The tension of the string.

So, in terms of tuning the banjo and playing:

1. When we fret a string we shorten it and raise the pitch.
2. We use thicker strings for the lower notes.
3. We crank up the tension with the tuning pegs to get a higher pitch.

Vibrating strings never produce a "pure" tone like an electronic oscillator producing a sine wave. Besides the basic pitch, there are always some overtones. It is this harmonic content that gives an instrument its characteristic "timbre" that allows us to tell one instrument from another even when they are playing the same pitch and volume.

In fact, we can influence the harmonic content of a vibrating string by playing closer to the bridge for a brighter sound or closer to the fingerboard for a mellower sound.

So, there's a lot more to it than just producing a basic pitch. That's part of the beauty and wonder of music.

Incidentally, "timbre" is pronounced (tam'bər). It's not what someone would shout when cutting down a tree. Very strange, but it comes from the Medieval French name for a tambourine or drum. Go figure.

1.3 Whole Steps and Half Steps

Let's talk about whole steps and half steps. Most stringed instruments are laid out so that each fret represents a half step. If you fret the string one fret higher, the string is shorter and sounds a half step or "semitone" higher. Go up two frets and how far have you gone? Exactly! A whole step!

In Western music we divide the octave up into 12 equal half steps. If you strike an open string and then strike it again while fretting the 12th fret, it is going to sound the same except an octave higher.

So, what can we do with these 12 half steps? Enter the Major Scale!

1.4 What is a Major Scale?

The major scale always has the same pattern of whole and half steps no matter which note you start on. In fact, this is the definition of a major scale. Here's how it goes.

Whole, Whole, Half, Whole, Whole, Whole, Half

This pattern is what gives that "do re mi" sound we are all so familiar with. So, no matter what note we start with, a major scale always looks like this:

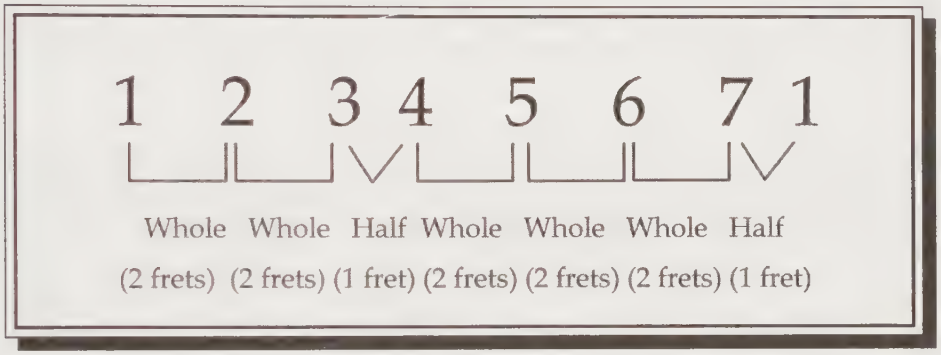


Figure 1.1 Interval Pattern for the Major Scale

The C major scale fits this pattern just using the natural notes of:

C D E F G A B C

This is easy to see on the piano keyboard. Figure 1.2 shows the C major scale on the piano keyboard.

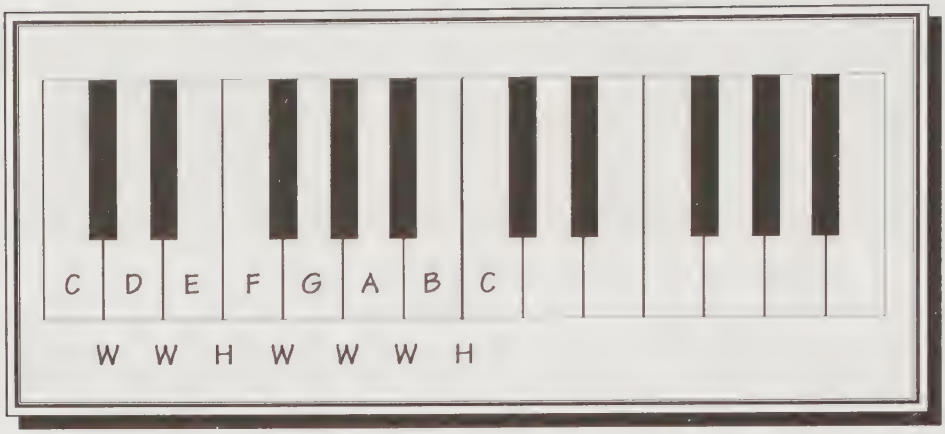


Figure 1.2 The C Major Scale on the Piano Keyboard

On the piano each key represents a half step. So if two white keys are next to each other with no black key in-between they are a half step apart. If there is a black key between them they are a whole step apart. With this in mind, can you see how the C major scale automatically fits the pattern of a major scale without having to adjust any of the notes?

Notice that any two consecutive natural notes have a whole step between them except for two pairs. Which ones are they?

There are half steps between:
B and C and
Between E and F.
All other pairs of consecutive notes
Have a whole step between them.

To remember the pairs that have a half step between them, think of a little honeybee.

Figure 1.3 Think of a Little Honey Bee to Remember B & E

It doesn't matter what note we start on, if we adjust the notes (making them either sharp or flat when necessary) to make them fit the pattern of "WWHWWWH," we will generate a major scale every time!

Keep in mind that when we put a **sharp** on a note we are raising it by one half step. So, C♯ is a half-step higher than C.

Also, when we put a **flat** on a note we are lowering it by a half step. So, C♭ is a half-step lower than C (sounds like B).

We have seen that the C major scale automatically fits this pattern without having to make any adjustments to the notes. But the C major scale is the **only** one like that. All other major scales will require some sharps or flats to make the notes fit. For example, here are the notes for the G major scale:

G A B C D E F♯ G

Can you see why we had to put a sharp on the F? You guessed it! We need to preserve the pattern of whole and half steps. It may sound like I'm

beating this to death, but it is important; you'll thank me later. You don't need to remember too many things to make sense of music theory, but this is one of them.

Figure 1.4 summarizes all 12 major scales and their enharmonic equivalents.

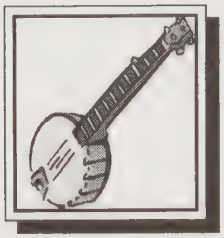
What is an "enharmonic equivalent" you ask. It's just a fancy way of saying, "Another name for the same scale." We'll talk more about enharmonic in a bit.

Major Scale								Key Signature
1	2	3	4	5	6	7	1	
W	W	H	W	W	W	H		
C	D	E	F	G	A	B	C	(No sharps or flats)
G	A	B	C	D	E	F♯	G	(1 sharp)
D	E	F♯	G	A	B	C♯	D	(2 sharps)
A	B	C♯	D	E	F♯	G♯	A	(3 sharps)
E	F♯	G♯	A	B	C♯	D♯	E	(4 sharps)
B	C♯	D♯	E	F♯	G♯	A♯	B	(5 sharps – enharmonic to C♭)
F♯	G♯	A♯	B	C♯	D♯	E♯	F♯	(6 sharps – enharmonic to G♭)
C♯	D♯	E♯	F♯	G♯	A♯	B♯	C♯	(7 sharps – enharmonic to D♭)
F	G	A	B♭	C	D	E	F	(1 flat)
B♭	C	D	E♭	F	G	A	B♭	(2 flats)
E♭	F	G	A♭	B♭	C	D	E♭	(3 flats)
A♭	B♭	C	D♭	E♭	F	G	A♭	(4 flats)
D♭	E♭	F	G♭	A♭	B♭	C	D♭	(5 flats – enharmonic to C♯)
G♭	A♭	B♭	C♭	D♭	E♭	F	G♭	(6 flats – enharmonic to F♯)
C♭	D♭	E♭	F♭	G♭	A♭	B♭	C♭	(7 flats – enharmonic to B)

Figure 1.4 The Major Scale for all 12 Keys

We'll discuss key signatures in Chapter 3. For now, let's just get used to the sound of the interval pattern for the major scale.

Also, we are going to experiment a little to see how we can affect the sounds that a vibrating string can produce.



1.5 Playing Examples

Example 1.5.1 Playing the D Major Scale

Let's play the D major scale by simply walking up the 4th string using the pattern WWHWWWH.

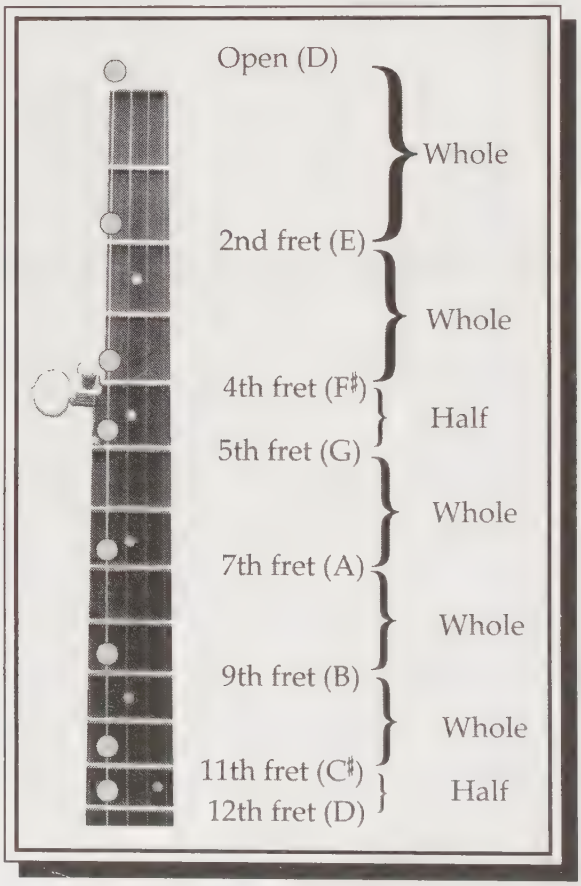


Figure 1.5 The D Major Scale

Example 1.5.2 The D Major Scale Played Across the Strings

Now, let's play the D major scale across the strings.

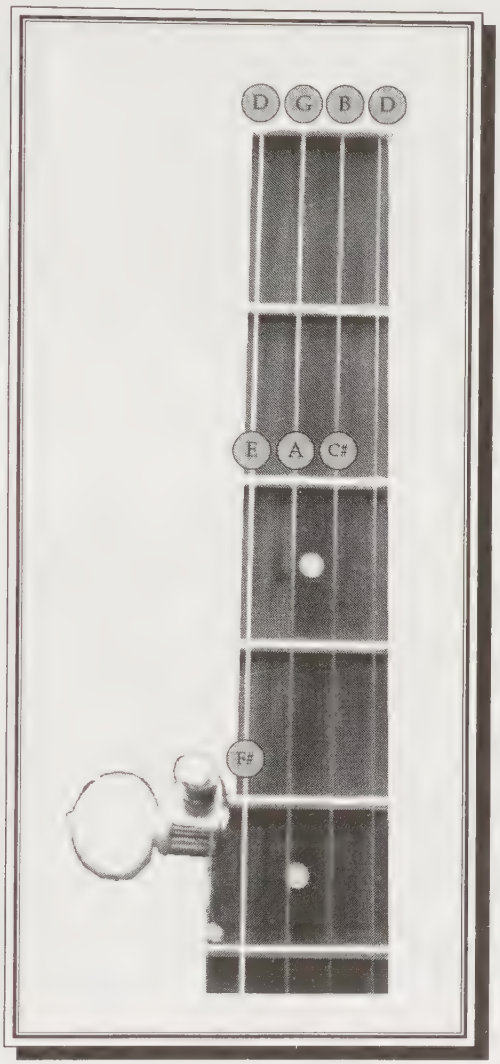


Figure 1.6 Play Across the Strings

Can you see how the interval pattern is still the same even though we are playing across the strings? If it's not immediately apparent, spend some time just comparing notes between the strings. We'll talk more about note names and intervals between strings later.

Example 1.5.3 Timbre and Harmonic Content

To make our playing as pleasing and interesting as possible we use several different techniques to affect the sounds we are producing. This example will help you become more aware of the musical expression your instrument is capable of. Try the following:

1. Strike an open string with your right hand close to the bridge and then
2. Strike the same string with your right hand close to the fingerboard.

Can you hear the difference?

When you strike the string close to the bridge you accent the upper harmonics and get a brighter sound. Striking the string closer to the fingerboard produces a mellower or "dolce" sound with fewer upper harmonics.

When playing different musical phrases (especially repeated phrases) it's good to vary the timbre, volume and phrasing. Mix it up a little!

The two photographs on the next page show the harmonic content of a vibrating string when struck close to the fingerboard and close to the bridge. You can tell by the peaks that both traces are the same frequency, but their harmonic content is quite different.

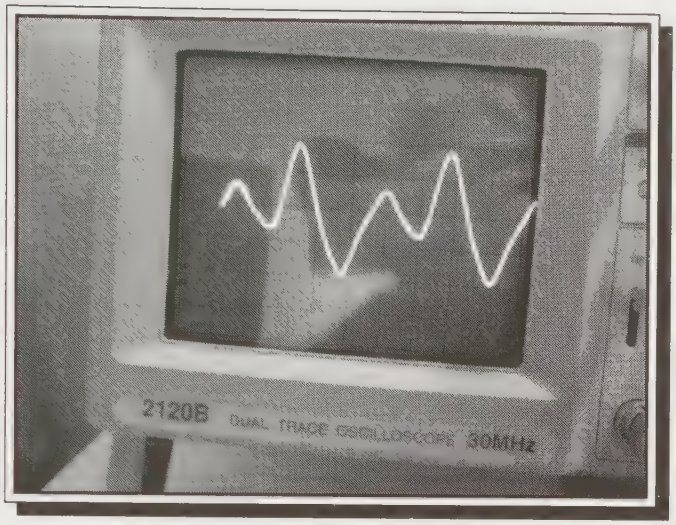


Figure 1.7 String Struck Close to Fingerboard

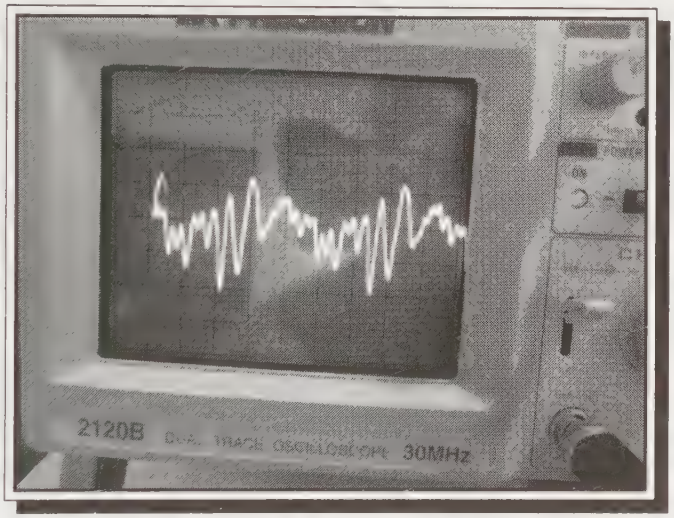


Figure 1.8 String Struck Close to Bridge

Example 1.5.4 Producing Harmonics

Forcing a "node" or a place where the string can't move produces **harmonics**. By touching the string lightly at that point, you prevent it from moving right there, but it's still free to vibrate. In that case, it is forced to vibrate in more than one segment. When we do this with open strings they are called *natural harmonics*.

Artificial harmonics are just as "natural" as any other kind of harmonics, but when we are fretting a string, our left hand is occupied with the fretting. Somehow, we need to both force a node and strike the string with our right hand. When we do this, we call them "artificial harmonics." This is usually done by touching the string with the right-hand index finger and striking it with either the thumb or ring ringer. The strongest harmonics always occur at the halfway point between the fretted position and the bridge.

So, how does it work?

As shown in Figure 1.9 below, when you strike a string and it is free to move, it will vibrate as a whole. If you force a certain point on that string to not move, the string will still vibrate but in a different way.

If you force a node in the exact midpoint (at the 12th fret) it will vibrate in two parts producing a beautiful ringing sound an octave higher. Why an octave higher? Because the vibrating parts are now half as long.

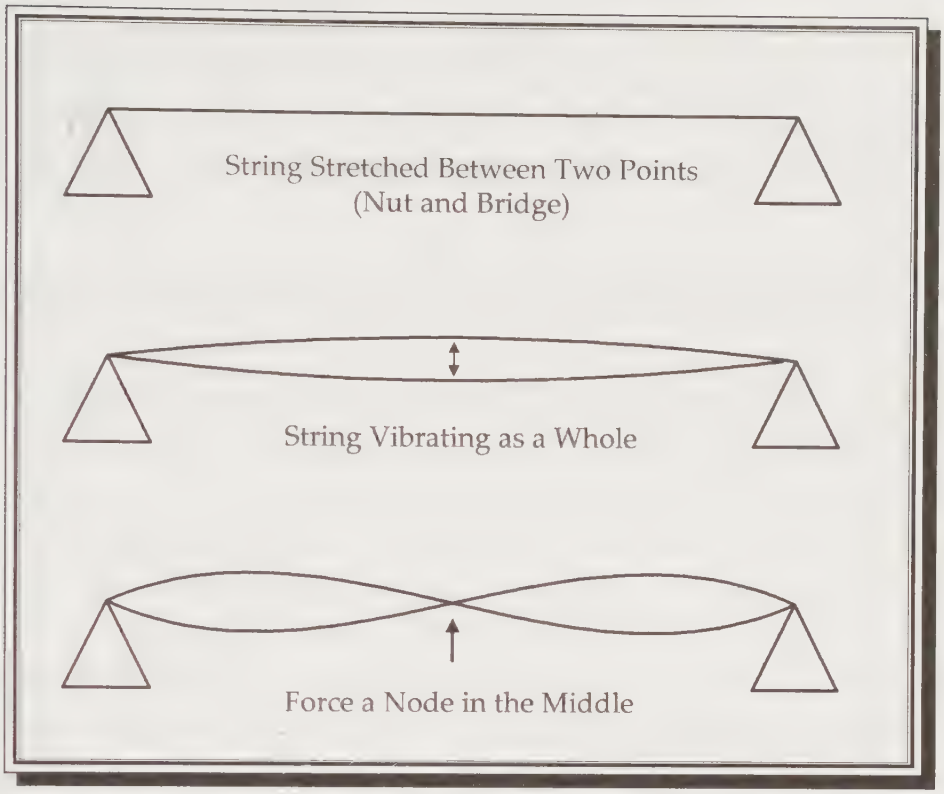


Figure 1.9 Harmonics

You can also force a string to vibrate in three, four or more segments. These harmonics typically don't sound out as strong, but with good technique, they can be heard.

The **scale length** of a banjo is the distance from the nut to the bridge. If you force a node at 1/3rd of the scale length (7th fret) or 1/4 of the scale length (5th fret) you will force the string to vibrate in three and four parts respectively.

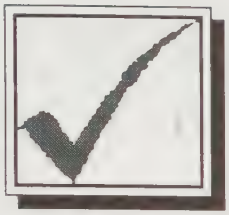
If you just think about fret numbers it may seem a little confusing, but keep in mind, the spacing of frets on the fingerboard is not equal between all frets. The frets get closer together as we go up the fingerboard. It's laid out that way to produce accurate notes for all twelve semitones of the octave.

The concept of scale length is especially important for the banjo because the bridge can be moved easily. A quick check for proper bridge placement is to produce a 12th fret harmonic. If you get a nice strong harmonic exactly over the 12th fret (not where you would fret it, but exactly over the fret) you are good to go.

If the 12th fret harmonic is below or above the 12th fret, the bridge needs to be moved. Measure the distance from the nut to the 12th fret and double it. That is how far the bridge should be from the nut. In other words, the 12th fret should be exactly half way between the nut and the bridge.

I know that's a lot to think about, but things will come together as we go along.

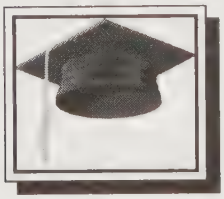
Because we use standard music notation and tablature as learning tools, Chapter 2 is designed to help us get familiar with these two systems of notation.



1.6 Review Questions for Chapter 1

1. One fret on the banjo represents what interval?
2. Two frets on the banjo represent what interval?
3. What is the interval pattern for the major scale in terms of whole steps and half steps? Don't cheat now. Do this from memory!
4. What is the only major scale that falls naturally into this pattern and doesn't need to be modified with sharps or flats?
5. What two pairs of notes have a half step between them?
6. What term is used to describe the harmonic content of a sound?
7. When you produce a harmonic at the 12th fret, in how many segments is the string vibrating?
8. When producing a harmonic at the 7th and 5th fret respectively, in how many segments is the string vibrating?
9. Who is your favorite banjo teacher?

Chapter 2. Reading Notation and Tablature



2.1 Overview

Standard musical notation and tablature are two very different ways of representing music. They share some things in common like:

Time signatures
Measure lines
Repeat symbols and
Rest symbols

But they are still very different. In my opinion, tablature is much easier for beginning players to get used to. Most banjo music is written in tablature, and most classical guitar music is written in standard notation. Of course, there have always been exceptions, and a lot of modern classical guitar books are starting to include tabs. But, the classical world typically places emphasis on the ability to read music and most banjo players stress the importance of playing by ear.

Each system has its advantages. The ideal situation, in my opinion, is to show both the notation and the tabs at the same time. It's also helpful to include chord diagrams and lyrics. When I write arrangements, I like to highlight the melody notes with a colored background and place the words under the tabs in order to help the student keep his place. After all, these are just learning tools. We might as well give ourselves every advantage

we can, right? I encourage my students to use the tab as a learning tool and then once they know the tune, put the tab away and play by ear. This way they can concentrate on their technique and the sound they are producing.

Many notes can occur in several places on the fingerboard. When reading standard notation, you need to determine where you are going to play them, but there is no guesswork with tablature. The tabs show you exactly which string to fret and where.

I think timing issues are more clearly shown in standard notation.

So, let's compare these two systems and then try a few playing examples.

2.2 Reading Tablature

Figure 2.1 below is a typical banjo lick. I call it "Alternating Thumb, Pinch." You can hear how it sounds on the online recording.

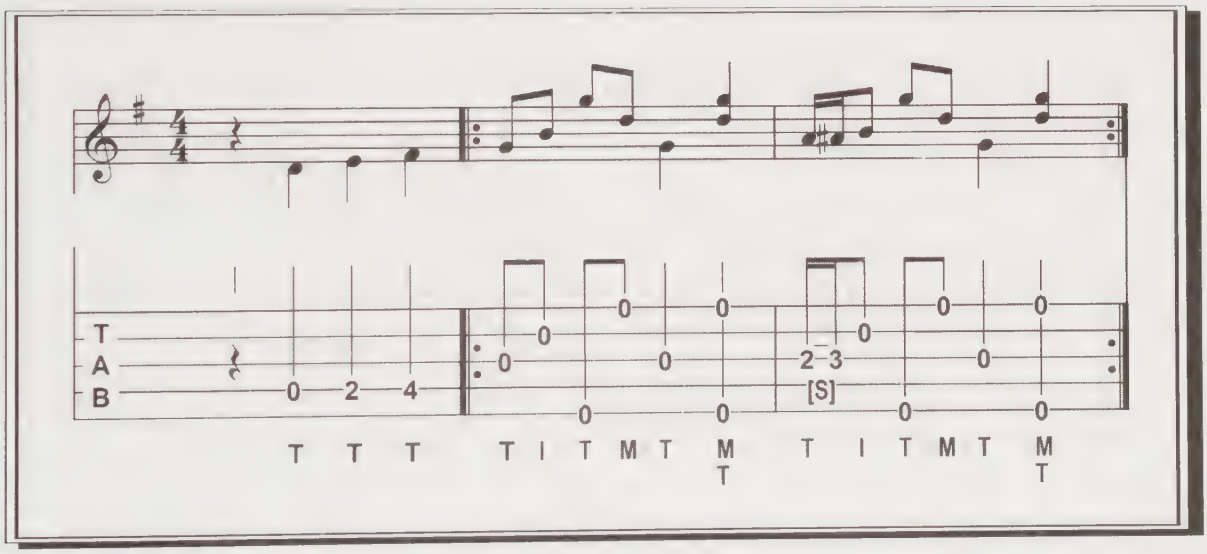


Figure 2.1 Reading Standard Notation and Tablature

First let's have a look at the tablature.

In tablature the horizontal lines are not staff lines. They represent the strings. The first string is on top and the fifth string is on the bottom. Remember, the fifth string is the short one with the tuning peg at the 5th fret.

The vertical lines (bars) divide the tab into measures, and the numbers on the lines tell you where to fret the string. For example, in the pickup measure you would hit the fourth string open, then the fourth string 2nd fret, and then the fourth string 4th fret.

I call the first measure the "pickup measure" because it is a partial measure. It only has three beats instead of four. Therefore, in terms of measure numbers, the next measure is called measure number one. The pickup measure doesn't get a number - poor thing.

Just above the tablature is the measure number. In a song with several lines you can expect to see the measure number at the beginning of each line. This is especially helpful when learning a song because it allows you to find any given measure quickly.

You don't always see this included, but in this case, I have included letters below the notes that tell which right hand finger plucks the string (T = thumb, I = index, M = middle).

This example is in 4/4 time. So, there are four beats per measure, and a quarter note gets one beat. We would count a measure of quarter notes as:

"1 2 3 4"

Measure number one starts with four eighth notes and then has two quarter notes. The eighth notes have their stems beamed together to group them by the beat. This makes reading them easier. In 4/4 time an eighth note gets half of a beat, so we would count a measure of eighth notes as:

"1 & 2 & 3 & 4 &"

Therefore, measure number one would be counted:

"1 & 2 & 3 4"

We'll talk a lot more about timing in Chapter 4.

In measure two the [S] below the tab of the first two sixteenth notes indicates a slide. In tablature you will see other embellishments such as [H] for hammer-on and [P] for pull-off.

The ending bar line for measure two has a repeat sign. This tells us to go back to the beginning repeat sign. Therefore, to play this example we would:

1. Play the pickup.
2. Play measures one and two, and then
3. Play measures one and two again.

When you see two notes with one above the other (as in beat four of both measures) that means to play them at the same time. We call that a "pinch."

2.3 Reading Standard Music Notation

Now let's have a look at the standard notation above the tab.

The first thing you will probably notice is the key signature. When reading tablature, we don't see a key signature (of course there still is one) because the tab simply tells us which string to play at what fret.

We'll talk a lot more about key signatures in Chapter 3, but for now, notice that this example is in the key of **G**. The key of G has one sharp (**F♯**). By putting the sharp up front in the key signature, we don't have to put a sharp sign in front of every F note in the entire piece. But this also means that whenever the player sees an F, he needs to remember to play F♯.

You might be wondering, "What if we actually want to play an **F** note instead of an **F♯**?" Don't worry, there's a way to take care of that. We'll talk more about "accidentals" in the next chapter.

The other thing you will notice is that the notation also has five lines, but these do not represent the five strings of a banjo. These are staff lines that indicate the names of the notes but not exactly where to play them. In fact, if this example were written for guitar there would still only be five staff lines - not six. So, where do we find these notes on our instrument?

Think way back to your elementary school music class. Your music teacher probably taught you about "Every Good Boy Does Fine" and "FACE."

OK, maybe it's been a while. Figure 2.2 shows the **treble clef**, sometimes called the **G Clef** because the G line passes through the curl of the clef symbol.

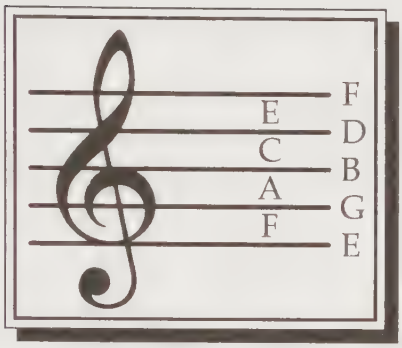


Figure 2.2 Notes on the Treble Clef

The spaces spell out the word "FACE" and the lines spell out "Every Good Boy Does Fine." So, you're thinking, "That's all well and good, but where are the notes on the banjo?"

This is why I think reading standard notation is harder than reading tab. You need to learn where the notes are. On the piano it's just one-for-one. Each note on the staff corresponds to a key on the piano keyboard, but for the banjo you have some choices. Really, it turns out to be a simple choice, but still you need to know the options. Figure 2.3 shows where the staff notes are on the banjo up to the 12th fret. After the 12th fret the note names repeat.

There are other clef symbols (like bass clef and C clef) for instruments that have a different range of notes than the banjo, but we'll just deal with the treble clef.

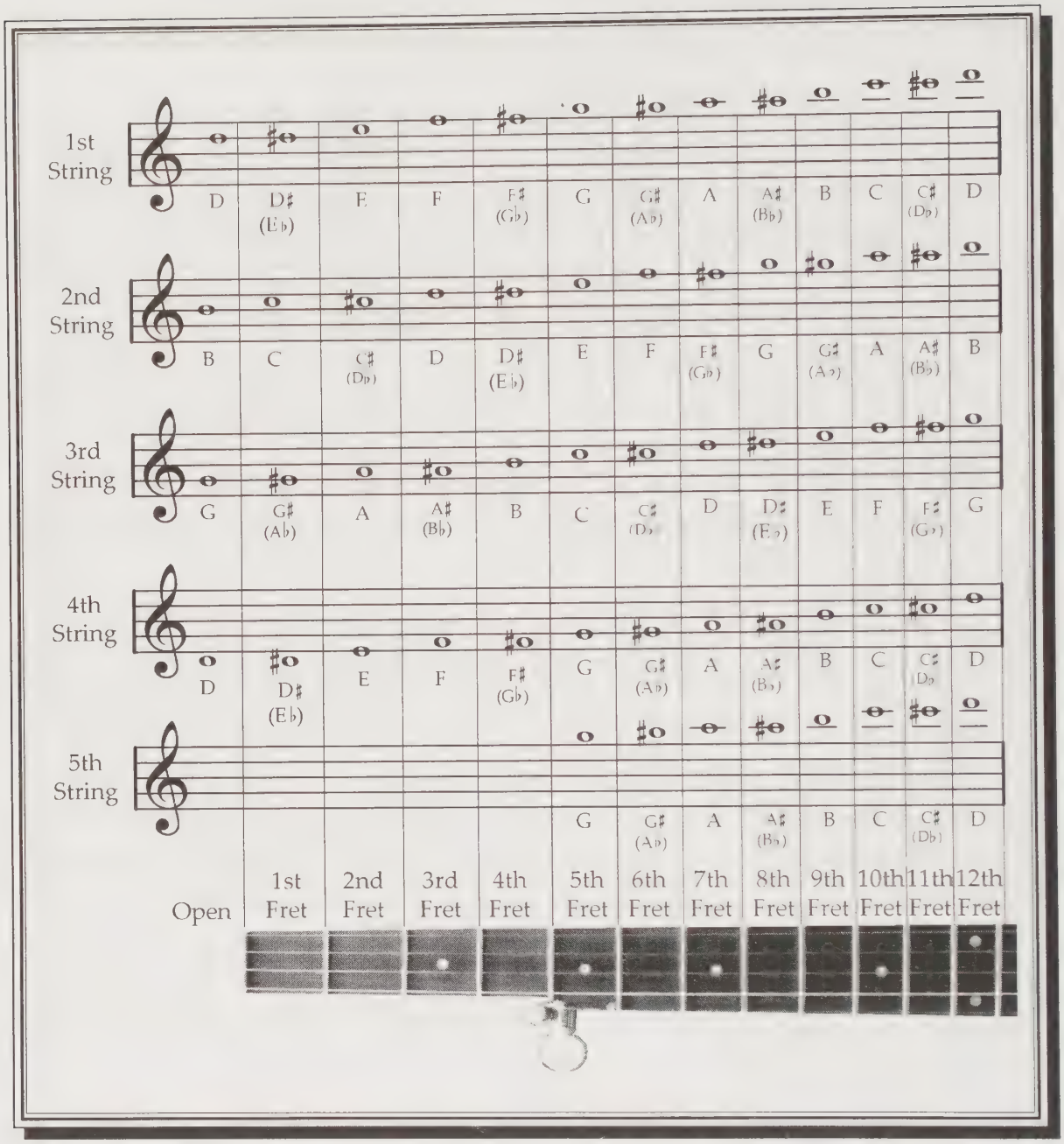


Figure 2.3 Notes on the Banjo

2.4 Musical Symbols and Song Structure

Besides reading the notes in music notation or tablature there are symbols and expressions used to specify a song's structure and dynamics. There are MANY symbols and expressions. We'll cover just a few of the most common ones that you will probably encounter.

2.4.1 Repeat Signs and Endings

Repeat signs are used as a shorthand to keep the number of pages down to a reasonable level. If you are going to repeat a passage, it's much more efficient to use repeat signs than to write the entire passage over again.

Referring to Figure 2.4 below, here's how it works. When you see the beginning repeat sign (that's the one with the double dots on the right) you know you'll be back here sometime. When you reach the ending repeat sign (double dots on the left) that tells you to go back to the beginning repeat sign.

So, you may play several verses. Each time you take the first ending and go back to measure number one. But you need to end the song sometime. The last time through you will skip the first ending and go to the second ending.

The first ending usually has some kind of "turnaround" or bass walk that leads you back to the beginning. If there is a pickup, it is usually part of the first ending. The second ending has a sense of finality. Many times, the first ending includes the **V** chord, which has a strong pull toward the **I** chord or **Tonic**. The second ending almost always uses the **I** chord, and it's saying, "OK, the song is over now." Most tunes end on the tonic note of the key.

We'll talk more about chord progressions and chords in a key later.

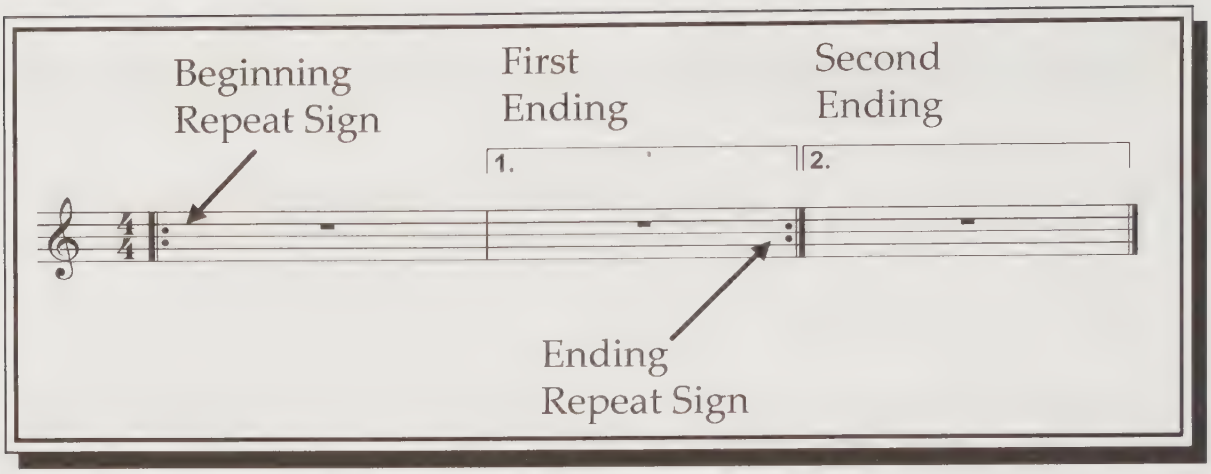


Figure 2.4 Repeat Signs

2.4.2 Song Parts

Songs have a structure. The two most common song structures are:

1. Verse, Chorus, Verse, Chorus
2. Verse, Verse, Bridge, Verse

To specify how the song is to be played, songwriters often label the different song parts with capital letters for Part A, Part B, etc. Then, at the beginning, they will have a notation something like this:

A A B B C

Which means, "Play Part A twice, Part B twice, and then Part C."

If it were simply Verse, Chorus, Verse, Chorus, etc. where the verse is Part A and the chorus is Part B, it would look like this:

A B A B A B

2.4.3 Tempo

Tempo can be indicated with a metronome setting such as:

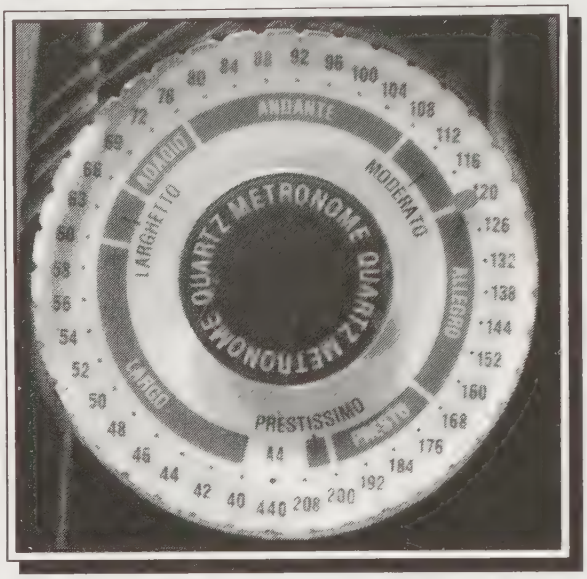
♩ = 120

In 4/4 time that would mean 120 beats per minute because a quarter note gets one beat.

Tempo can also be indicated with expressions like these:

Grave	Very slow (25-45 bpm)
Largo	Broadly (40-60 bpm)
Lento	Slowly (45-60 bpm)
Larghetto	Rather broadly (60-66 bpm)
Adagio	In a leisurely manner (66-76 bpm)
Andante	At a moderate walking pace (76-108 bpm)
Moderato	At moderate speed (108-120 bpm)
Allegretto	Fairly fast (112-120 bpm)
Allegro	Fast (120-168 bpm)
Vivace	Lively (168-176 bpm)
Presto	Very fast (168-200 bpm)
Prestissimo	As fast as possible (200 bpm and above)

Below is a picture of a metronome showing some of these ranges:



Other expressions regarding tempo include:

Accelerando	Getting gradually faster
Ritardando	Getting gradually slower
Ritenuto	Holding back
Rubato	Flexible tempo, "stolen" time
Tempo giusto	Strict tempo
A tempo	Return to the original tempo

2.4.4 Dynamics

Dynamic markings have to do mainly with volume and how you express the dynamic changes. Below are some common ones you will probably encounter:

Crescendo Growing louder

Decrescendo (diminuendo) Growing quieter

fff	Molto Fortissimo	Extremely loud
ff	Fortissimo	Very loud
f	Forte	Loud
mf	Mezzo forte	Fairly loud
mp	Mezzo piano	Fairly quiet
p	Piano	Quiet
pp	Pianissimo	Very quiet
ppp	Molto Pianissimo	Extremely quiet

2.4.5 Rhythm

Fermata Also called **pause**, **hold,** or **bird's eye**. It is placed above a note or rest to indicate that it should be held longer than the note value would indicate. Often used to focus attention to that place.

Accent Accent this note more than others. Often used to bring out melody notes.

Staccato Detached. Played by shortening the note and leaving some space between it and the next note.

Slur — Play these notes smoothly or connected. Also called **legato**. For two connected notes the slur is often played using a slide, hammer-on, or pull-off. This symbol can be used over several notes to indicate that the phrase should sound connected.

2.4.6 Other Musical Expressions

8va (ottava)	Play the notes an octave higher than written.
8vb (ottave bassa)	Play the notes an octave lower than written.
A Cappella	Italian for "in the manner of the church." Vocal music performed without instrumental accompaniment.
Brio	Vigor
Dolce	Sweetly
Glissando	Rapid slide
Legato	Smoothly
Portamento	Smooth rise or fall of pitch
Scherzo	A joke
Vibrato	An even fluctuation of pitch (or volume) of a single note.

2.5 Playing Examples

I know this is pretty simple, but this playing example is just to help you become familiar with reading standard notation and tablature. The intent is not so much to teach a song, as it is to help you become familiar with the notation systems. In fact, this isn't even an arrangement. It's just the melody for the simple children's nursery rhyme *Twinkle, Twinkle Little Star*.

This is an easy little song, but if you can play the melody (with good timing and hitting the right notes) you are well on your way to understanding music notation and tabs!

What can you learn from this example?

Where the notes are on the banjo.
How the song is divided up into measures.
The timing of quarter notes and half notes.
Stuff like that.

Of course, you could pick out the melody using the "hunt and peck" method, but it will be more instructive if you take your time and, for each note, look at the tab or notation and see if it makes sense in terms of the note name and the timing. Come on, dig in a little!

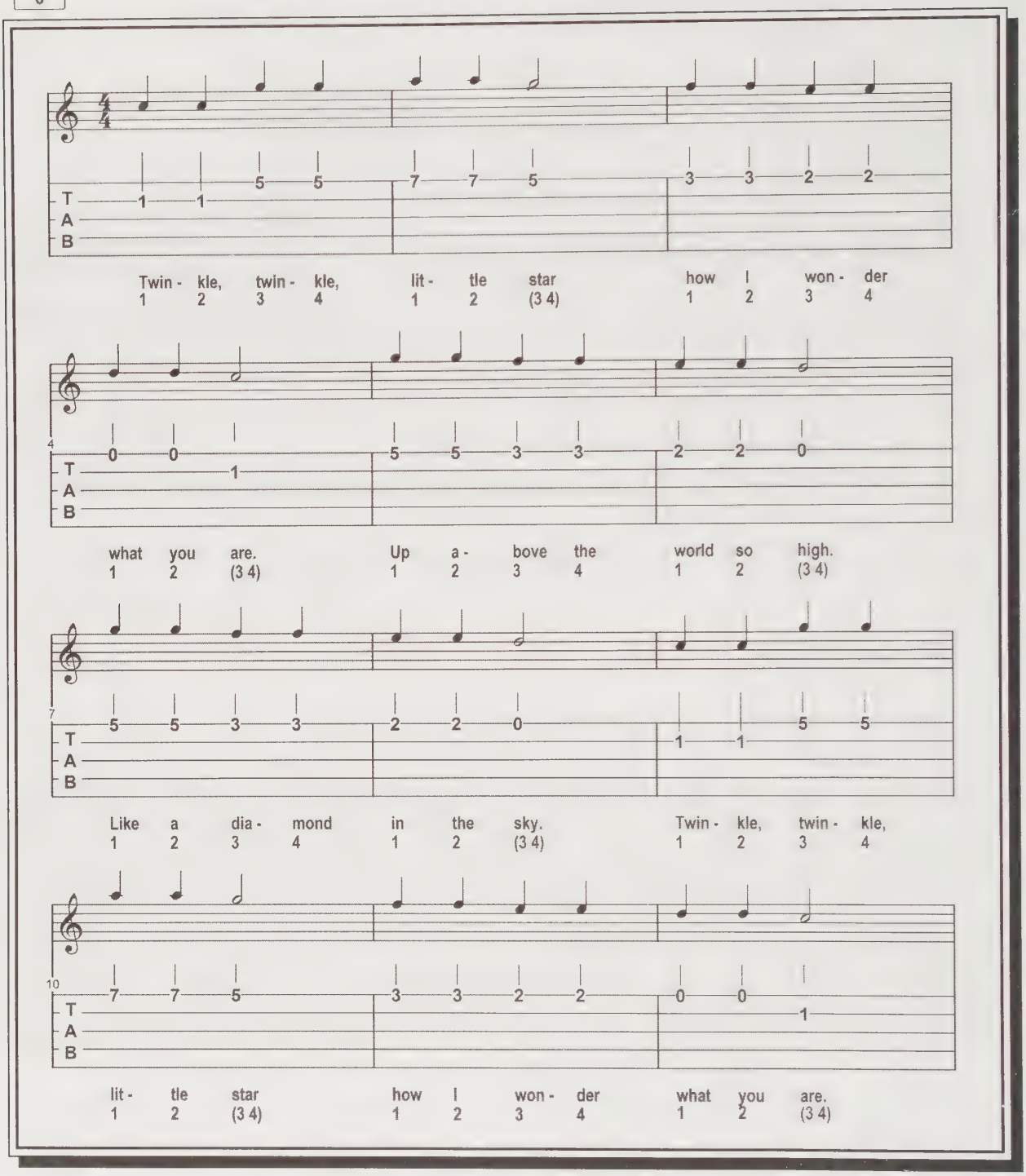
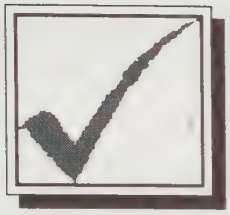


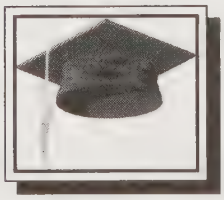
Figure 2.5 Twinkle, Twinkle Little Star



2.6 Review Questions for Chapter 2

1. What are some of the musical elements that standard notation and tablature have in common?
2. When reading tablature what do the horizontal lines represent?
3. On the banjo where will you find the note **E** that is on the bottom line of the staff? (Hint: one place only).
4. What does "presto" mean?
5. What does "crescendo" mean?

Chapter 3. Key Signatures



3.1 What is a Key Signature?

A key signature is a handy way to summarize which notes in the song need to be altered so they fit in that key. Instead of having to put a sharp or flat in front of a note every time it occurs in the song, we just put it up front in the key signature. For instance, the **key of G** has one sharp (**F♯**). The key signature is shown in Figure 3.1 below.

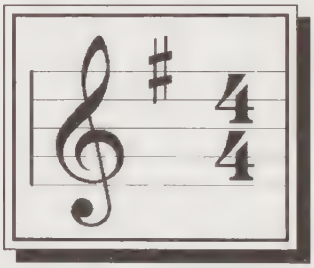


Figure 3.1 Key Signature for the Key of G

3.1.1 Order of Sharps

There is an "order of sharps." In other words, they always occur in the same order.

1. If there is one sharp in a key it will be **F♯**
2. If there are two sharps they will be **F♯** and **C♯**
3. If there are three sharps they will be **F♯**, **C♯**, and **G♯**

And so it goes, all the way up to all seven notes being sharped. What key would that be? Of course! **C♯ major**.

To remember the order of sharps think:

"**F**at **C**ats **G**o **D**own **A**nd **E**at **B**reakfast."

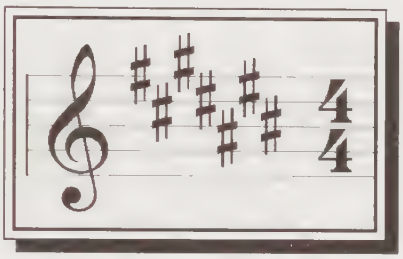


Figure 3.2 Order of Sharps

So the order of sharps is:

F♯ C♯ G♯ D♯ A♯ E♯ B♯

If you play in a lot of different keys you will get to know them automatically without thinking, but there is an easy way to figure them out. Just remember this:

The last sharp is a half step below the note that names the key.

Now, that may sound complicated, but here's how it works. Count the sharps and go up a half step.

For example, if you are told there are four sharps in the key, they would have to be F♯ C♯ G♯ and D♯. So, **D♯** is the last sharp and it is a half step below **E**.

Therefore, the key is **E**.

It works the other way around too. If you know the key is **E**, you know the last sharp is **D♯** (because it's a half step below E). So, you start counting until you reach D♯ by thinking, "Fat Cats Go Down And Eat Breakfast." But you stop counting with D♯. So:

There are four sharps in the key of **E**.

Just for fun, try it with the other keys. You can check to see how you did by looking at Figure 1.4.

"Do I have to?" Come on, just do it!

3.1.2 Order of Flats

There is also an "order of flats." To remember the order of flats think of the word "BEAD" and then "Go C Flats."

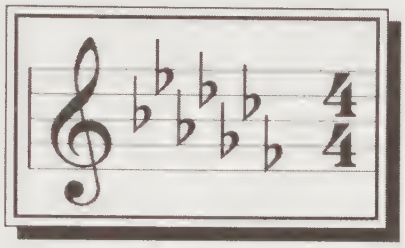


Figure 3.3 Order of Flats

So, the "order of flats" is:

B♭ E♭ A♭ D♭ G♭ C♭ F♭

Notice that the order of flats is just the reverse of the order of sharps. Pretty cool!

Just as with sharps, there is an easy way to figure out a key signature that has flats. To do that just remember two things:

1. The key of F has one flat (B♭)
2. The second to last flat names the key.

For example, if there are three flats they are B♭, E♭, and A♭. The second to last flat is E♭, so the key is E♭. Voila!

This also works the other way around. If you know the key is E♭ you can count the flats until you get one past E♭ (B♭, E♭, A♭) and see that there are three flats in the key.

Sometimes in a noisy environment like a bar or outdoor folk festival the song leader will hold up two fingers to indicate the number of sharps. What key? You guessed it! Key of D. If he holds his fingers down he is indicating flats.

3.2 Why Even Have Different Keys?

Remember Figure 1.4 where we summarized all of the major scales? Well, it turns out that songs typically have a "tonal center." This is the note that the song keeps coming back to and almost always ends on. I call it the "home place" or "place of rest."

Here's a fun experiment. Listen to a song that you know is in a certain key. How do you know the key? Maybe it's in a songbook that shows the chords and has a listening CD, or maybe it's a CD with liner notes telling you what the key is. Listen for that special note that the song keeps coming back to. Also, listen for the tone or chord that it ends on. Most songs will have an ending with some finality to it and come to a place of rest on the tonic note so it doesn't "leave you hanging."

Now, find that note on your banjo. Just hunt and peck up and down a string until you match the note. That is the tonal center. That's the note that names the key. The song may have a major or minor sound so it will be in a major or minor key. A combination of the key signature and last melodic note will define the key without playing a note.

Here's the exception:
The song may be something strange and modal, old-time, medieval, whatever. If it is, then all bets are off. But for our purposes most popular songs are in a major or minor key.

Now, here's the fun part. Once you think you have determined the key, go check and see if you got it right. If you did, that's great! If not, what went wrong? This is a great learning experience. You will be reinforcing your music theory knowledge and having a fun adventure in "ear training."

Another interesting thing about key signatures is that most of the notes of the song and the chords come right out of that scale! Of course, a melody can have any notes the songwriter wants it to have. If some of those notes are "outside" the key, that's perfectly fine. But we have to let people know what they are. Enter the **accidental**.

3.3 Accidentals

Accidentals aren't accidents. That's just the name we give notes that fall outside the key signature.

In Figure 3.4 on the next page the key signature is one sharp indicating that we are in the key of G. Every time we see an F note we will play F♯ instead. But what if we actually want an F at that point, not F♯? Then we put a natural sign in front of it. Also, for the second quarter note, we want a C♯ so we place a sharp in front of the C.

Accidentals only apply to the measure in which they are written. In the next measure everything reverts back to the key signature. Therefore, the

first quarter note of measure two is an F♯ and the last two quarter notes are both C natural.

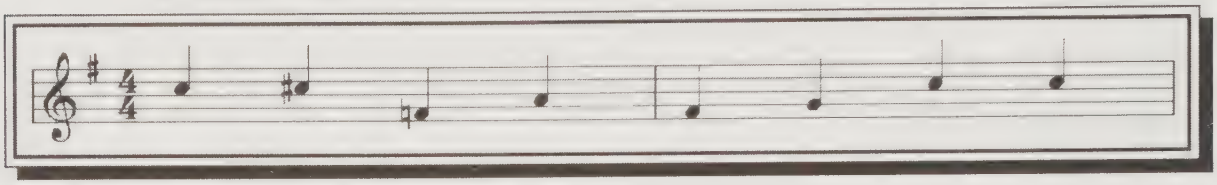


Figure 3.4 Accidentals

3.4 Transposing Between Major Keys

Let's say you have a song book with some of your favorite songs and you want to just strum the chords or do a little pattern pick to accompany your singing. Maybe you're having a singalong with some friends or you want to play a rest home gig. How fun is that! Only problem is that the song is in the wrong key. How can you change the chords to the key you want to sing it in?

There are excellent transposition wheels available that allow you to quickly dial up the key you want. Then you can write in the new chords next to the original ones and off you go. You could also use the chart in Figure 1.4, and do the following:

1. Find the key that's in your songbook.
2. Find the key you want to transpose to.
3. Swap the chords one-by-one, and write them in the songbook next to the original chords.

Let's say the songbook has the chords for B♭ and you want to play the song in C. The B♭ scale is the second line in the lower group (flat keys) and the C scale is the top line in the upper group (sharp keys). So here's how they would line up:

B♭	C	D	E♭	F	G	A	B♭
C	D	E	F	G	A	B	C

So, every time the book has a B♭ you substitute a C. For each C you substitute a D. For each D you substitute an E, etc. Keep in mind, if the chord is a minor or a seventh chord your new chord needs to also be minor or seventh. That's it! This example is pretty easy because we are just raising everything one whole step, but many times it is not so obvious.

Now, transposing actual banjo arrangements is a little more involved, but there are options.

1. If you already play an arrangement of a song, and you want to play it exactly as you learned it (except in a different key) you can use a capo. In that case, figure out how many half steps you have to raise it to get to the new key and put the capo on that fret. (Also capo the 5th string the same amount).

2. Most song writing programs like TablEdit have a transpose function that will take an entire arrangement and transpose it up or down by any number of semitones (half steps).

3.5 Transposing Instruments

3.5.1 Introduction

What is a transposing instrument?

Every instrument has a range of notes it can play. These notes don't always fit nice and neat on the treble clef. If we didn't do something about it we might end up trying to read the music on a bunch of ledger lines above or below the staff. So, by using this system of notation we can get as many notes as possible on the staff where they are easy to read.

Also, if you play an instrument like a sax that comes in different sizes, it's nice to learn to read just once and not have to read differently for each size saxophone you pick up. If you learn the fingering for one size of sax and then use that same fingering for a different sized instrument - guess what - the note is different because the instrument is a different physical size.

3.5.2 The Banjo Is a Transposing Instrument

Believe it or not, the banjo is a transposing instrument!

When we play the banjo, we are not actually playing the notes as written. You may say, "You gotta' be kidding me. When I see an 'A' on the staff I play an 'A', so how can you say I'm not playing the note as written?" The simple answer is that we are playing an octave lower than what is written.

For the banjo we are pretty lucky. The note names are still the same, but the banjo is sounding an octave lower than written. Notation for some instruments is transposed at an interval other than an octave. Can you imagine the score that a conductor has to deal with? One piece of music could have several different key signatures!

3.5.3 The A440 Tuning Fork: A Bit of Music History

The A440 tuning fork shown in Figure 3.5 can help us understand this situation.

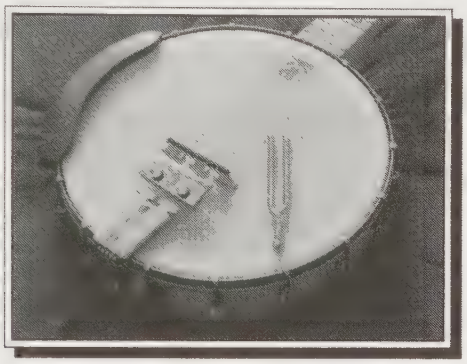


Figure 3.5 A440 Tuning Fork

For you youngsters out there, here is a little bit of music history. In the old days before electronic tuners we would use an A440 tuning fork to get the first string in tune. Then we would tune the other strings accordingly. Where is A440? In standard tuning for the banjo it is on the first string at the 7th fret as shown in Figure 3.6 below.

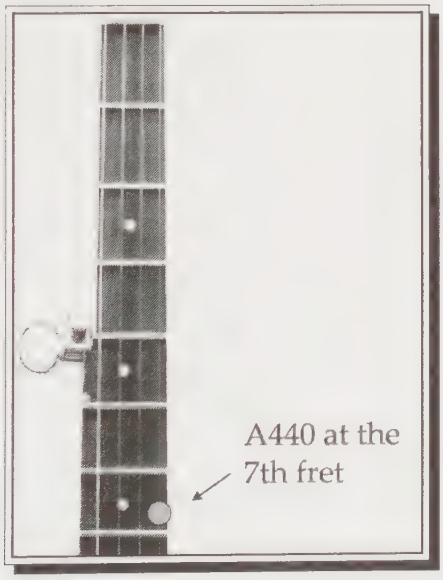


Figure 3.6 A440 on the Banjo

So, we would rap the tuning fork on our knee, touch it to the bridge, and magically we would hear this beautiful tone. Then we would fret the string and tune it up to match.

So here's the thing. Concert pitch A440 is defined as "the A above middle C." It's also called A4 because it occurs in the octave that starts with the fourth C on the standard 88 key piano. Figure 3.7 shows where it is on the staff.

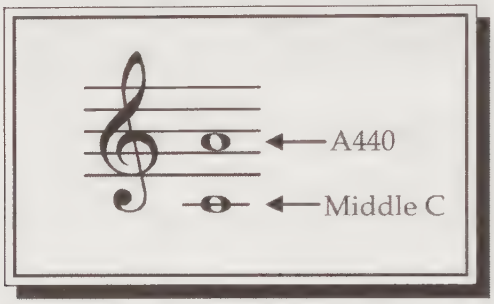


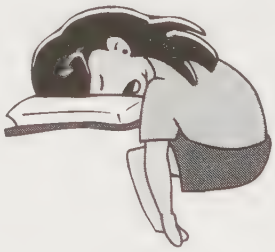
Figure 3.7 A440 on the Treble Staff

BUT when we see a note on the 2nd space of the staff we play the third string at the 2nd fret. This is actually an octave below the real A440. So, we are playing an octave lower than what is written. Wow! Long explanation for a simple concept, but I hope it makes sense.

Does knowing that the banjo is a transposing instrument really matter? Probably not, unless you are arranging music to be played with a non-transposing instrument like the fiddle; then, the banjo sounding an octave lower works to your advantage because you are less likely to sound dissonant notes in the same range. The guitar also sounds an octave lower than written.

Many times you will see a little "8vb" below the clef sign.
This comes from the Italian "ottava bassa" or "at the octave below."

OK, now we're going to have some fun looking at key signatures! Ready?



3.6 Playing Examples

A lot of banjo music is written in the key of G because "standard tuning" for the 5-string banjo is an open G chord. This tuning provides a lot of open strings for playing in the key of G.

We'll use that great old gospel tune *Amazing Grace* as our playing example.

3.6.1 Key Signature and Accidentals

Figures 3.8 and 3.9 show a simple arrangement of *Amazing Grace* in the key of G. The first thing you will notice is that there is one sharp in the key signature. This means that every time the player sees an **F** in the music he needs to actually play **F♯**. But, another interesting thing to notice is that there are no F♯ notes anywhere in the arrangement!

In more complex arrangements of this song you will sometimes see a few accidentals. These mainly have to do with embellishments to the basic melody.

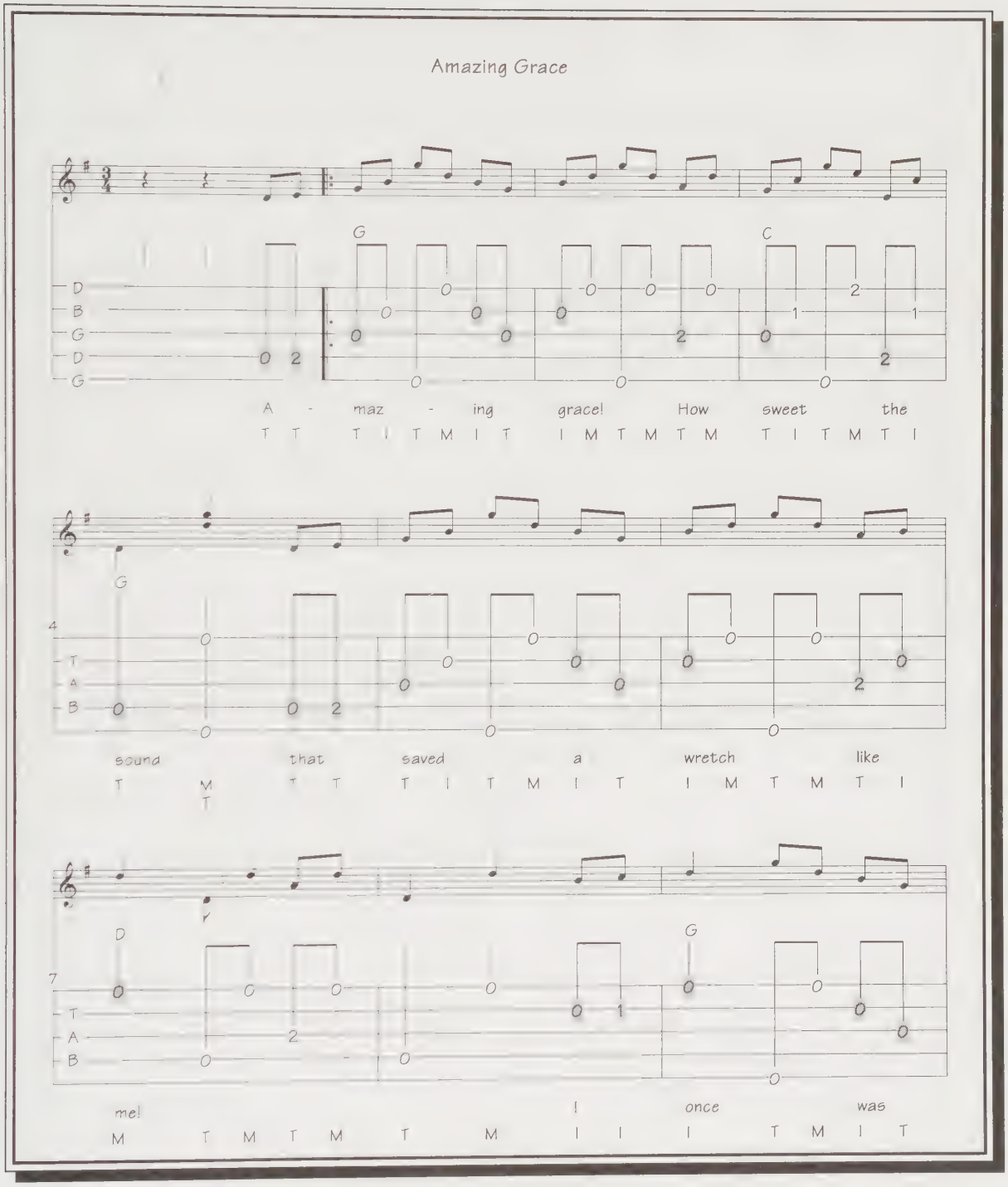


Figure 3.8 Amazing Grace

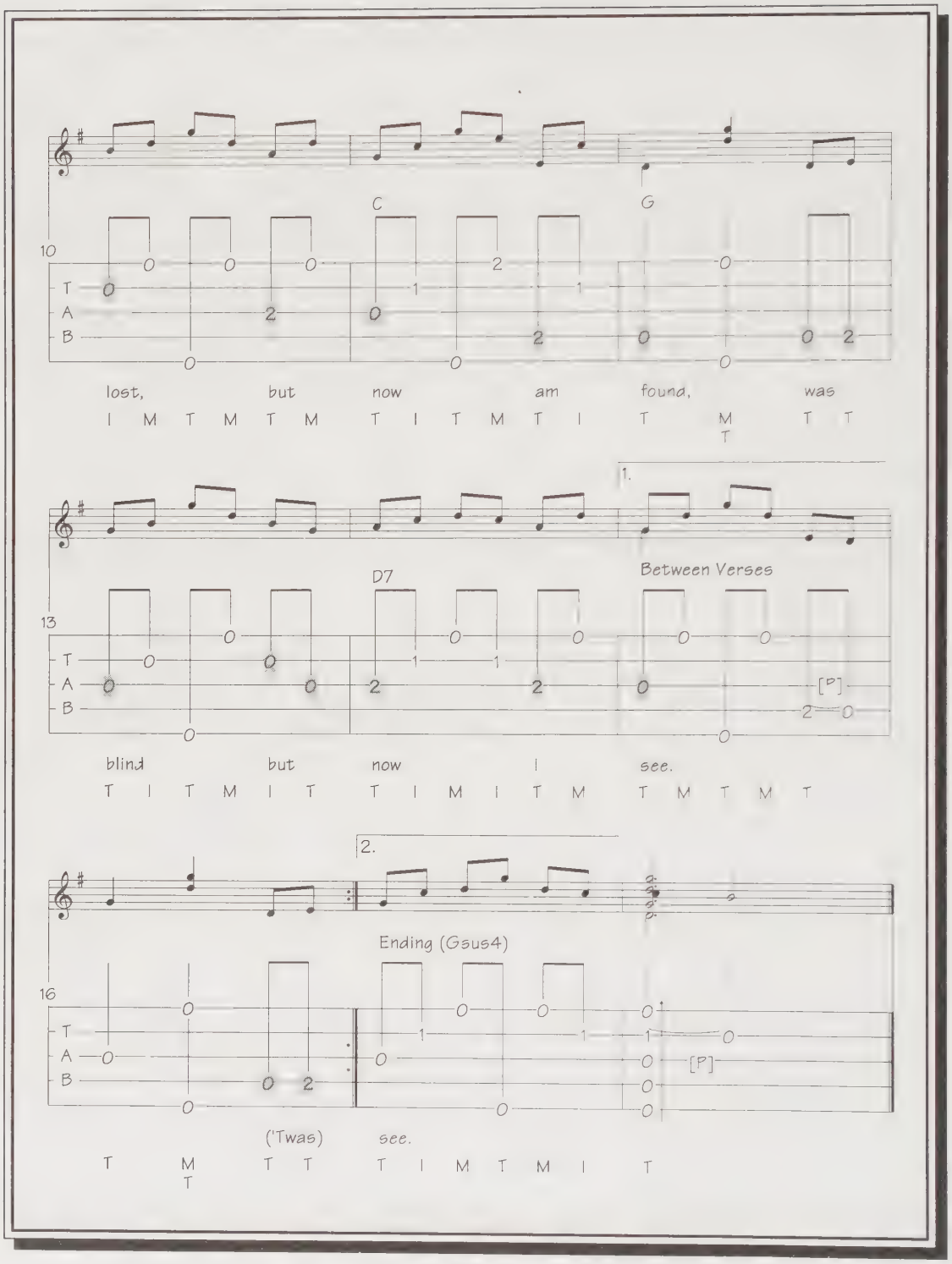


Figure 3.9 Amazing Grace - Continued

3.6.2 The Tonal Center

This song starts and ends on a G major chord and there is a strong pull back to G throughout the song. To make the ending a little more interesting I included a Gsus4 and then a pull-off to the G chord at the end.

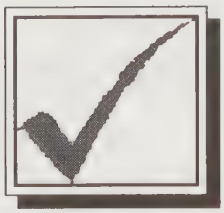
3.6.3 Repeats and Song Structure

This is a sixteen-measure song in 3/4 time with a one-beat pickup consisting of two eighth notes. There are two endings. After the pickup you would typically play measures one through sixteen where there is a repeat sign taking you back to measure one. Then, last time through, you would skip the first ending and go straight to the second ending.

Notice that the first ending contains the pickup into the next verse and the second ending has a sense of finality.

For beginning banjo players I like to highlight the melody notes and place the lyrics under the tab to help them keep their place. Also, in this case I included suggested right-hand picking fingers.

T = Thumb
I = Index
M = Middle



3.7 Review Questions for Chapter 3

1. What is a key signature?
2. What is the order of sharps?
3. What are accidentals?
4. What is a transposing instrument?
5. Is the banjo a transposing instrument?
6. What is the advantage of a system of transposing instruments?
7. What is so important about the pitch A440?
8. Why is A440 called A4?

Chapter 4. Timing

4.1 Overview: Timing Is Everything!

Timing is the heart of music. You can learn to play a lot of notes and play them really fast. But if your timing is not rock solid it will never sound like music! On the other hand, if your timing is good, you can make a few mistakes and it's no big deal. It will still sound musical and people will enjoy it.

Let's have a look at a few of the various aspects of timing.

4.2 Time Signatures

You may have seen time signatures that look like the ones in Figure 4.1.

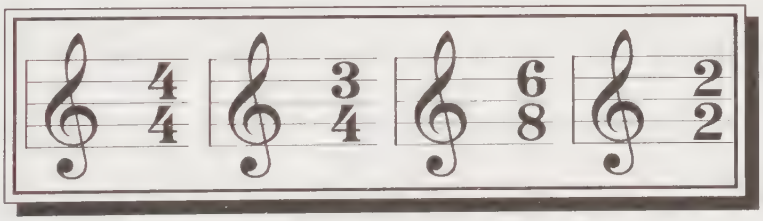


Figure 4.1 Time Signatures

Each time signature has two numbers:

1. The top number tells us how many beats there are in each measure.
2. The bottom number tells us what kind of note gets one beat.

The 4/4 time signature tells us there are four beats per measure and a quarter note gets one beat.

The 3/4 time signature tells us there are three beats per measure and a quarter note gets one beat.

The 6/8 signature indicates there are six beats in each measure and an eighth note gets one beat.

For 2/2, there are two beats per measure and a half note gets the beat.

Also, you may see some time signatures that don't have any numbers.

Common Time is the same as 4/4.

Cut Time is the same as 2/2.

So far, so good? We'll do some counting examples pretty quick.

4.3 Note Values and Counting

The most common notes you will see are:

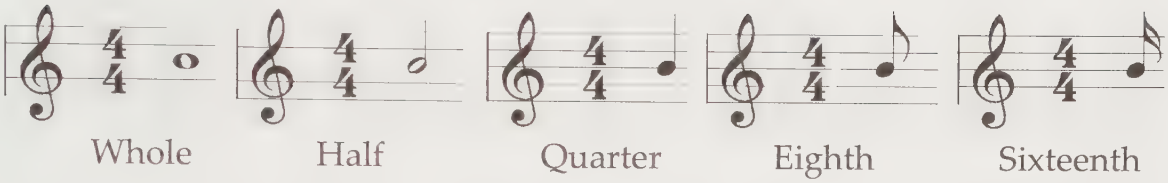


Figure 4.2 Note Symbols

Figure 4.3 shows how much space each one would take up on the staff.

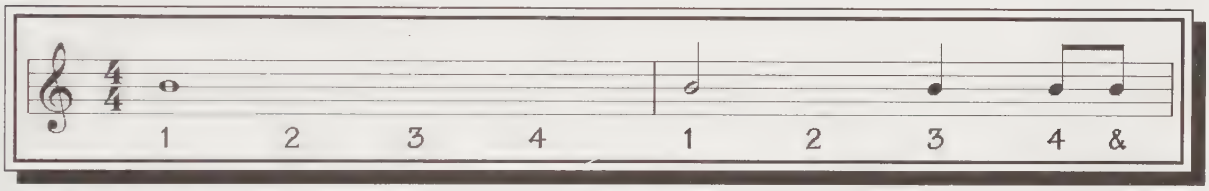


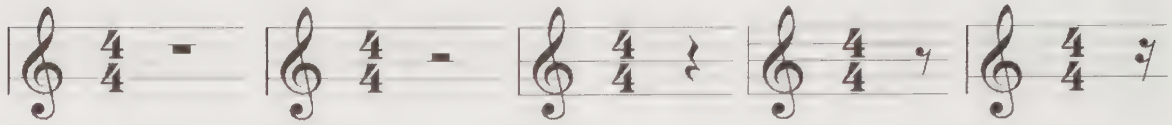
Figure 4.3 Note Values

Notice the following:

1. The time signature in Figure 4.3 is 4/4, and I have put the count below the staff.
2. The whole note takes up the whole first measure.
3. The half note takes up half of the second measure.
4. The quarter note occupies one beat and
5. Two eighth notes (with their flags tied together) take up the space of a quarter note or one beat.
6. I didn't show the sixteenth notes, but there would be four of them per beat counted "1 e & a"

4.4 Rests

A "rest" is a period of silence where we don't play. Each note value has a corresponding rest that lasts the same duration.



Whole Half Quarter Eighth Sixteenth

Figure 4.4 Rest Symbols

4.5 Playing (Clapping) Examples

We will be in 4/4 time for all of these examples. Notice that I have included the count above the notes. For each example, count-in "1 2 3 4" and then clap the notes as shown. By counting it in, you establish a tempo for yourself.

Count-in as slow as you want, but then focus on maintaining that tempo. Check the online audio recording to make sure you clapped each one correctly.

4.5.1 Quarter Notes

In 4/4 time a quarter note gets one beat. So this first one is pretty simple. We count it "1 2 3 4, 1 2 3 4"

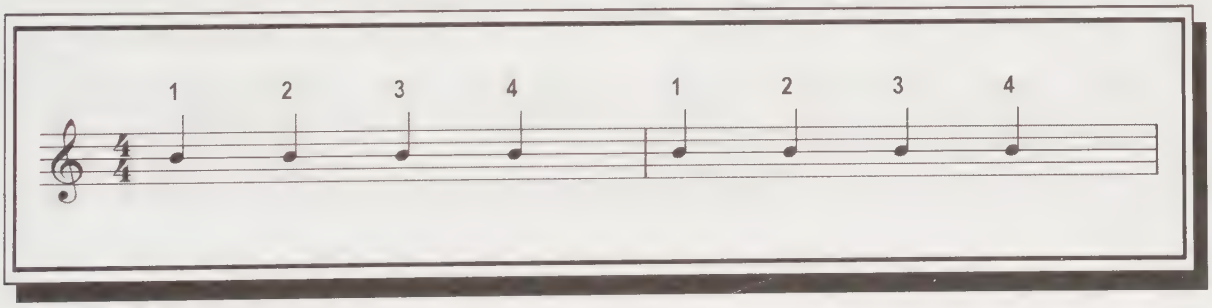
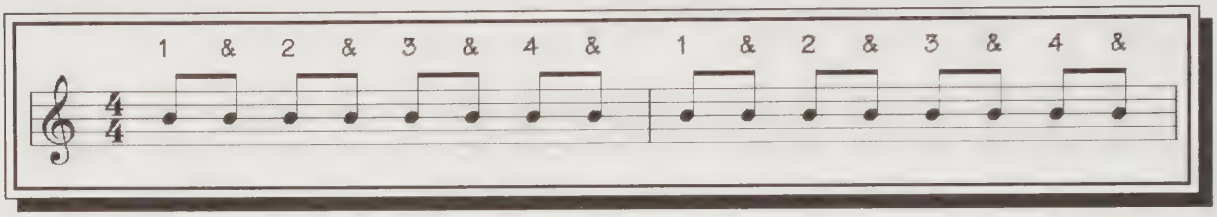


Figure 4.5 Quarter Notes

9

4.5.2 Eighth Notes

Eighth notes happen twice as fast as quarter notes, so we have two eighth notes per beat. The counting as shown below preserves the "1 2 3 4" for the beats, but also includes an "and" in-between beats.



10

Figure 4.6 Eighth Notes

4.5.3 Sixteenth Notes

Sixteenth notes happen twice as fast as eighth notes or four times as fast as quarter notes, so we will have four notes per beat. Again, the count as shown below preserves the beat and the eighth note syllables plus it adds in the "e" and "ah" to give a count with four notes per beat.

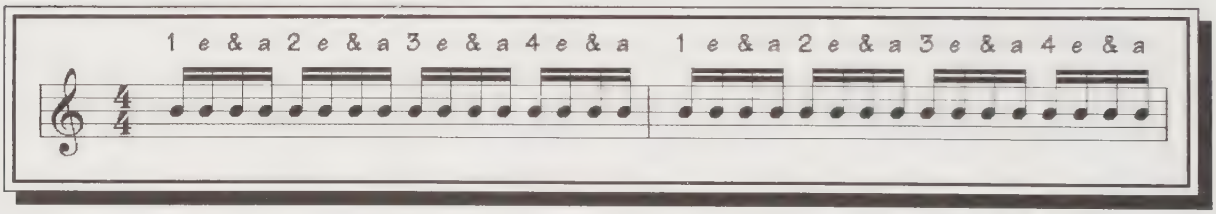


Figure 4.7 Sixteenth Notes

4.5.4 Half Notes

Half notes take up twice the space of quarter notes, so each one gets two beats. Even though no one else will hear it, hold your hands closed for two beats before clapping again. This will help you get the feel for half notes.

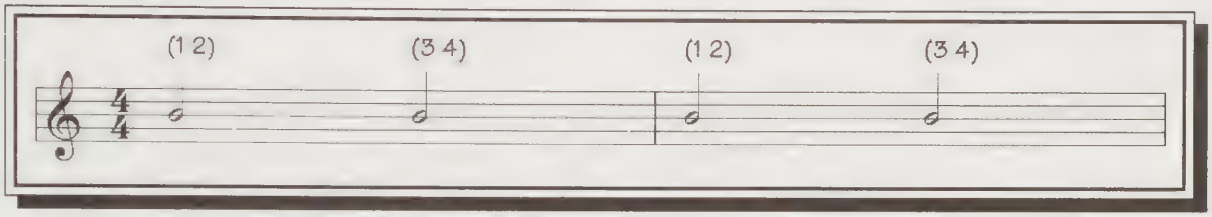


Figure 4.8 Half Notes

4.5.5 Whole Notes

Whole notes take twice as long as half notes. Therefore, each whole note will get all four beats and take up an entire measure in 4/4 time. How easy is that!

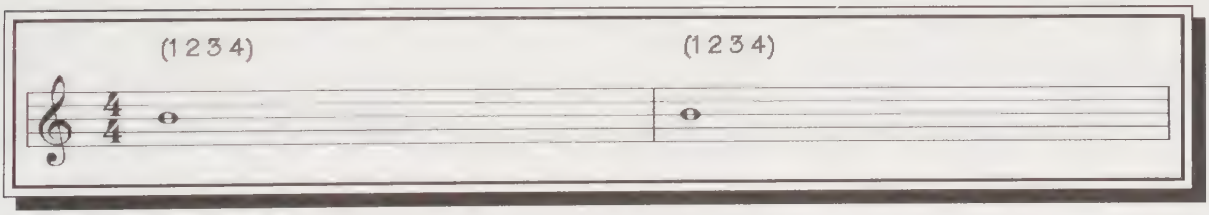


Figure 4.9 Whole Notes

13

4.5.6 Eighth-Note Triplets

With eighth-note triplets there are three notes per quarter note (per beat). You might be thinking, "Wait a minute. There aren't three eighth notes per quarter note. There are only two." Well, when they are eighth-note triplets there **are** three. An easy way to preserve the count and hear the sound of eighth-note triplets is to say "1-trip-let, 2-trip-let, 3-trip-let, 4-trip-let"

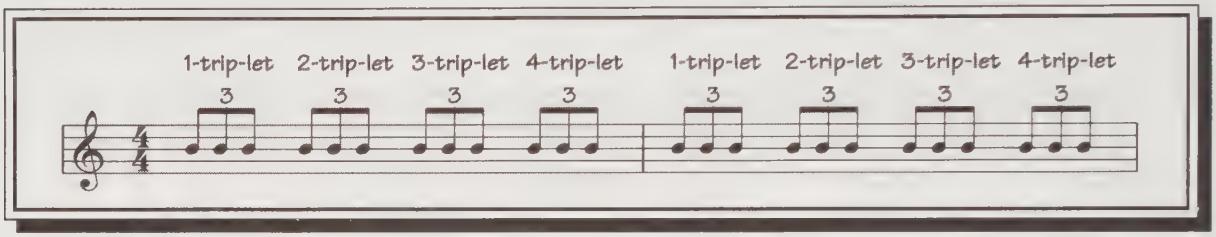


Figure 4.10 Eighth-Note Triplets

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4.5.7 Mixed #1

Here's where the fun begins! Now that you are familiar with the sound of each type of note, we are going to mix it up a little.

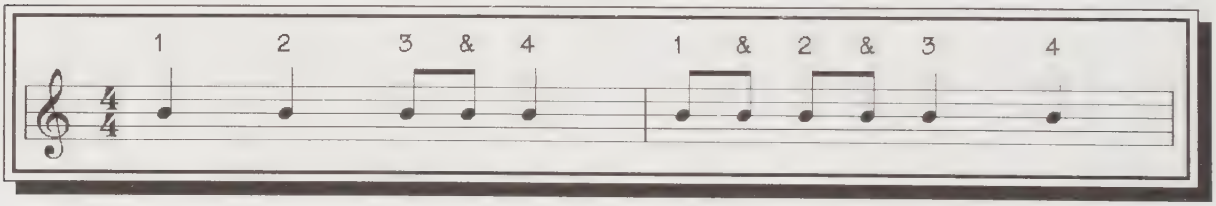


Figure 4.11 Mixed #1

15

4.5.8 Mixed #2

Example 4.5.8 combines triplets with eighth notes and quarter notes. Count through it a few times before clapping it out. Notice the use of "swing eights" in this example.

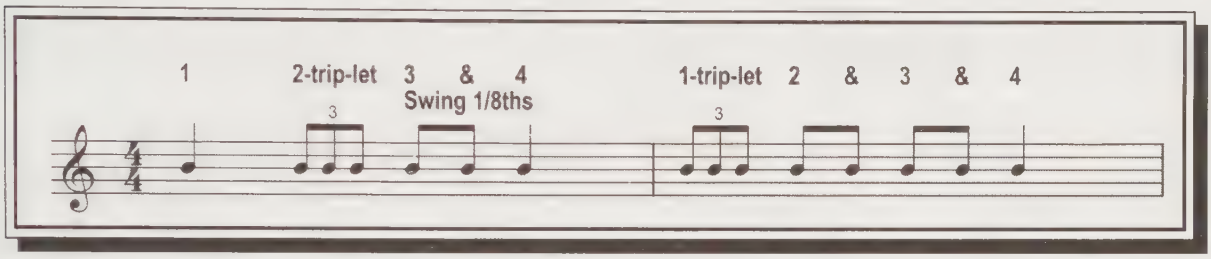


Figure 4.12 Mixed #2

16

4.5.9 Mixed #3

In Example 4.5.9 we start out with sixteenth notes, then mix it up with some eighth notes, a quarter note and a half note.

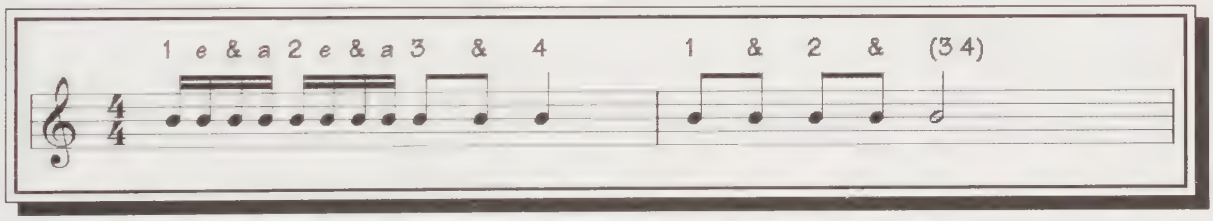
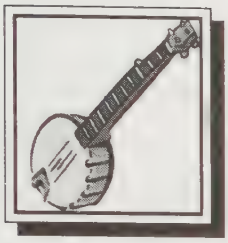


Figure 4.13 Mixed #3

Did you get Mixed #3 right first time out?

Don't worry, neither did I!



4.6 Playing Examples

These playing examples are just to help you become familiar with timing and syncopation. To help a little bit, I have placed the count underneath the tab.

Let's look at some basic banjo rolls. Of course, you might like to practice these rolls as part of your banjo playing! If you are a beginning banjo player, you need to be comfortable with these roll patterns.

Keep the timing solid, but don't be afraid to introduce a little swing feel. To get that swing thing going think, "Chat - ta - NOOG - a" as in Chattanooga, Tennessee. Figure 4.7 illustrates the basic banjo rolls for the following:

1. Example 4.6.1 Alternating Thumb Roll
2. Example 4.6.2 Alternating Thumb - Pinch
3. Example 4.6.3 Forward Roll
4. Example 4.6.4 Forward-Reverse Roll

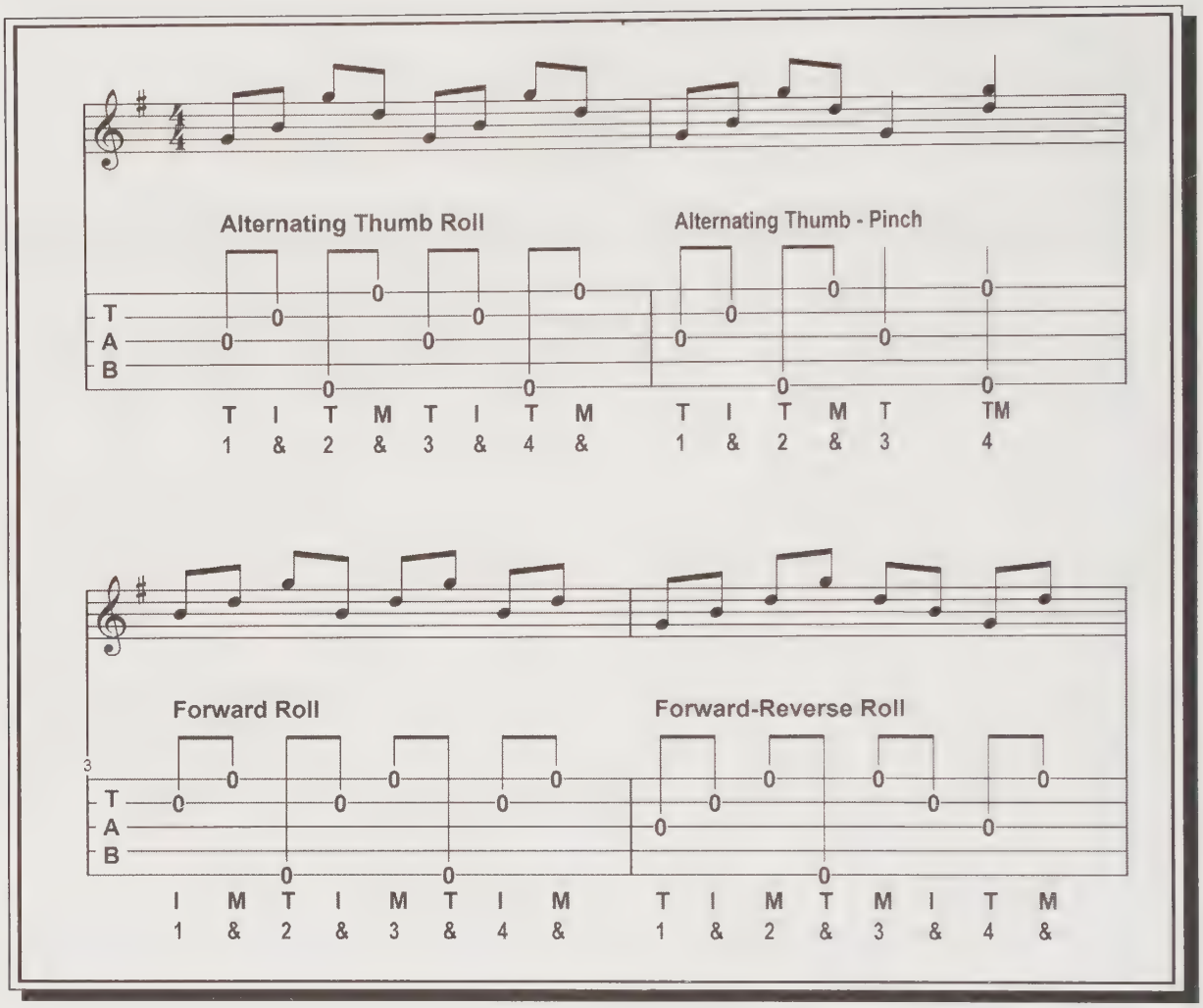
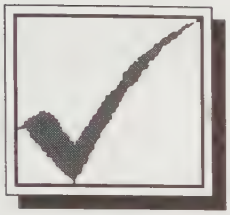


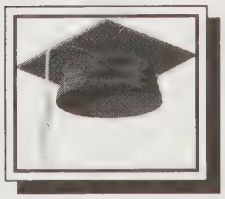
Figure 4.14 Banjo Roll Patterns



4.7 Review Questions for Chapter 4

1. In a time signature, what does the top number tell you?
2. In a time signature, what does the bottom number tell you?
3. In 4/4 time, how many beats does a quarter note get?
4. In 4/4 time, how many beats does an eighth note get?
5. In 3/4 time, how many beats are there in each measure?
6. For eighth-note triplets, how many notes are there per quarter note?
7. In 4/4 time, how do you count sixteenth notes?
8. In 4/4 time, how do you count eighth-note triplets?
9. What's another name for 4/4 time?
10. What's another name for 2/2 time?

Chapter 5. Musical Intervals



5.1 Overview: It's Like Using a Ruler

A musical interval is the distance between two notes. It's like measuring the distance with a ruler. How far apart are they? Once we establish the two notes we are concerned with, it doesn't matter which one is higher or lower. We're just concerned with the distance between them.

Now, if we are talking about ascending and descending intervals from a given note, then we need to look a little closer.

Is an understanding of musical intervals important? Well, think about chord construction, songwriting, transposing, and improvisation. Believe it or not, an understanding of musical intervals will also make your listening experience more enjoyable.

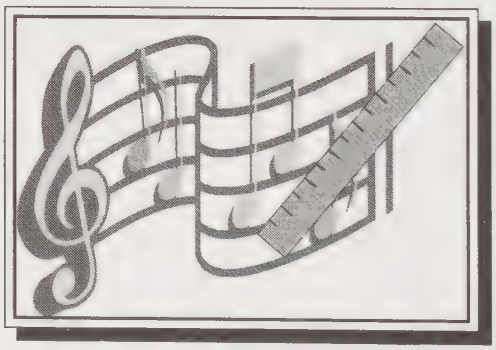


Figure 5.1 Musical Intervals

5.2 Musical Intervals Have a First Name and a Last Name

Just like people, musical intervals have two names: a **First Name** and a **Last Name**.

5.2.1 The Last Name

The last name is a number. To determine the last name, we count the distance between the letter names of the notes. For example, from C to E is a third. When counting "C, D, E," count "1, 2, 3."

5.2.2 The First Name

The first name is a little more colorful. It might be major, minor, perfect, diminished or augmented. To determine the first name, we need to figure out the actual distance between the notes in terms of whole steps and half steps.

Figuring out the first names is not hard, but you need to keep a few things in mind.

Remember the C major scale? Maybe you thought that once we left Chapter 1, you could forget about it. Not true!

If you remember that any two consecutive notes have a whole step between them except B to C and E to F (which have half steps between them), then you can count the actual distance between any two notes.

Figure 5.2 Pattern for the C Major Scale

Referring to Figure 5.2 above, let's try a few:

1. E to G = 1 1/2 steps or 3 half steps
2. D to A = 3 1/2 steps or 7 half steps

See how it works?

Now, if the interval is made bigger or smaller using sharps or flats we need to factor that in. Let's alter the above examples a little bit and see what happens.

1. E to G♯ = 2 whole steps because we made the interval bigger by a half step. How? By raising the upper note.

2. D♭ to A = 4 whole steps because we made the interval bigger by lowering the bottom note a half step.

So, we're still just talking about the distance between two notes.

Here's what happens when you make an interval bigger or smaller:

Decrease a major interval by a half step and it becomes minor (m).
Decrease a minor interval by a half step and it becomes diminished (d).
Increase a minor interval by a half step and it becomes major (M).
Increase a major interval by a half step and it becomes augmented (A).
Decrease a perfect interval by a half step and it becomes diminished (d).
Increase a perfect interval by a half step and it becomes augmented (A)

Right about now you might be thinking, "Just take me out and shoot me!"

Well, let's have a look at Figure 5.3. It summarizes the first names for intervals in terms of the actual distance (whole steps and half steps). Hopefully, all this stuff about intervals will start to come together.

To help make sense of this chart, let's look at an example. The top row describes the interval of a **second,** like C to D or A to B.

1. If there is a whole step between them the interval is a major second (M2).

2. If we decrease that interval by putting a flat on the top note or a sharp on the bottom one, then the distance is only a half step and the interval becomes a minor second (m2).

3. If we increase the interval by putting a sharp on the top note or a flat on the bottom one, then the distance is 1 1/2 steps and it becomes an augmented second (A2).

	Diminished	Minor		Major	Augmented
Second	0	1/2		1	1 1/2
Third	1	1 1/2		2	2 1/2
Sixth	3 1/2	4		4 1/2	5
Seventh	4 1/2	5		5 1/2	6
			Perfect		
Unison			0		1/2
Fourth	2		2 1/2		3
Fifth	3		3 1/2		4
Octave	5 1/2		6		6 1/2

Figure 5.3 First Names for Intervals

Note:

There is no such thing as a Major or Minor Fourth.
There is no such thing as a Major or Minor Fifth.
They are Perfect, Diminished or Augmented.

"Is everybody happy? Well I should say!"

Now, here's a strange one! How far apart are C♯ and D♭?

Answer: They sound the same, so they're called **enharmonic equivalents**. This means there are two different names for the same note. If you played these two notes on a banjo you would fret them in exactly the same place. Technically, the interval would be called a diminished second (d2).

You might be thinking, "That's just playing with words!" Well, not really. Have a look at Figure 5.4 on the next page.

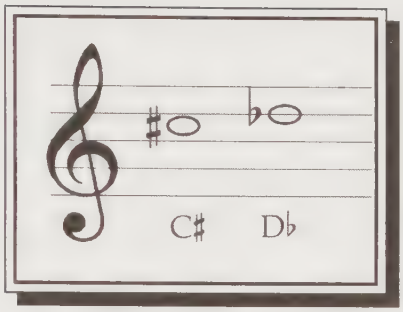


Figure 5.4 Enharmonic Equivalents

The first note must be called "C♯" because it's on the third space of the staff, and the second note has to be called "D♭" because it's on the fourth line. But you would play them in exactly the same place on the banjo fingerboard (second string at the 2nd fret). How cool is that!!

5.2.3 Interval Pattern for the Major Scale

The major scale is so important and so fundamental. What are the intervals for each scale degree with respect to the tonic?

Here's how it goes:

1	2	3	4	5	6	7	8
do	re	mi	fa	sol	la	ti	do
P1	M2	M3	P4	P5	M6	M7	P8

Some of these terms you don't hear very often, but technically they are called:

do - do = Perfect unison (P1)
do – re = Major second (M2)
do – mi = Major third (M3)
do – fa = Perfect fourth (P4)
do – sol = Perfect fifth (P5)
do – la = Major sixth (M6)
do – ti = Major seventh (M7)
do – do = Perfect octave (P8)

Don't let the term "Perfect" throw you off. How can the interval of a fourth or a fifth be more "perfect" than any of the others? Of course, they're not! That's just the terminology that has evolved over time. So, we just deal with it.

5.2.4 Wrap Up

To wrap up all this technical stuff let's try a few examples of ascending and descending intervals.

1. Interval between C and D ascending?
   Last Name = **2** (count from C to D)
   First Name = **Major** because the actual distance is a whole step.
   Therefore, the interval between C and D is a **major 2nd** (M2).

2. Interval between B and E ascending?
   Last Name = **4** (count from B to E)
   First Name = **Perfect** (2 1/2 steps)
   Therefore, the interval between B and E is a **perfect 4th** (P4).

Are we having fun yet? OK, let's try a couple more.

3. Interval between E and D ascending?
   Last Name = **7** (count from E up to D)
   First Name = **Minor** (5 whole steps. or a whole step less than an octave)
   Therefore, E to D ascending is a **minor 7th** (m7).

4. Interval between E and D descending?
   Last Name = **2** (counting down or backwards from E to D)
   First Name = **Major** (1 whole step)
   Therefore, E to D descending is a **major 2nd** (M2).

5.3 Easy Ways to Remember the Sound of Intervals

The best way to get used to the sound of musical intervals is to relate them to familiar songs. Probably ascending intervals are easier to hear, but it is important to be familiar with the sound of descending intervals too.

> You might call this "ear training"
> But it's really "mind training"

Figure 5.5 on the next two pages lists some popular songs that have ascending and descending intervals. I tried to find several examples for each interval because not everyone is an old guy like me. I'm sure you can think of lots more!

Minor 2nd	Ascending	Descending
	A Hard Days Night	Joy to the World
	Isn't She Lovely	Oh, Little Town of Bethlehem
	White Christmas	The Lady is a Tramp
	I Left My Heart in San Francisco	Stella by Starlight
Major 2nd	Ascending	Descending
	Are You Sleeping Frère Jacques	Mary Had a Little Lamb
	Happy Birthday to You	Yesterday
	Do-Re-Me (Sound of Music)	Three Blind Mice
	Silent Night	The First Noel
	Rudolph the Red-Nosed Reindeer	Away in a Manger
Minor 3rd	Ascending	Descending
	Greensleeves	Hey Jude
	Lullaby (Brahms)	Frosty the Snowman
	The Impossible Dream	The Star-Spangled Banner
Major 3rd	Ascending	Descending
	Oh, When the Saints	Swing Low Sweet Chariot
	Kumbaya	Summertime
	Michael Row the Boat Ashore	Shoo Fly, Don't Bother Me
Perfect 4th	Ascending	Descending
	Amazing Grace	Oh, Come all ye Faithful
	Here Comes the Bride	I've Been Working on the Railroad
	We Wish You a Merry Christmas	Born Free
	Love Me Tender	Shave and a Haircut
	Auld Lang Syne	A Mighty Fortress is Our God
Perfect 5th	Ascending	Descending
	Twinkle Twinkle Little Star	What Do You Do with a Drunken Sailor
	Blackbird	It Don't Mean a Thing
	My Favorite Things	The Way You Look Tonight
	Scarborough Fair	Feelings

Minor 6th	Ascending	Descending
	The Entertainer (Scott Joplin)	Love Story theme
	In My Life (Beatles)	Chega de Saudade
	She's a Woman (Beatles)	
Major 6th	Ascending	Descending
	My Bonnie Lies over the Ocean	Nobody Knows the Trouble I've Seen
	It Came upon a Midnight Clear	The Music of the Night
	Dashing Through the Snow	Down by the Riverside
	Hush Little Baby	Over There
Minor 7th	Ascending	Descending
	Somewhere (West Side Story)	An American in Paris
	The Winner Takes All (ABBA)	Watermelon Man
Major 7th	Ascending	Descending
	Bali Hai (1st & 3rd notes)	I Love You (Cole Porter)
	Over the Rainbow (1st & 3rd notes)	
Octave	Ascending	Descending
	Over the Rainbow	Willow Weep for Me
	The Christmas Song	

Figure 5.5 Popular Songs

5.4 Pitch Names

For note names we only use the letters "A" through "G" and then we start over an octave higher with "A" again. We don't use other letters like "J" or "K."

That's only seven different letter names. So how can we tell which "C" we are talking about?

Because the piano has such a wide range of notes (with 88 keys) we relate the letter names to the different octaves covered by the piano keyboard.

Figure 5.6 shows the octaves covered by the piano keyboard. Notice that "middle C" begins the 4th full octave on the keyboard so we call it C4.

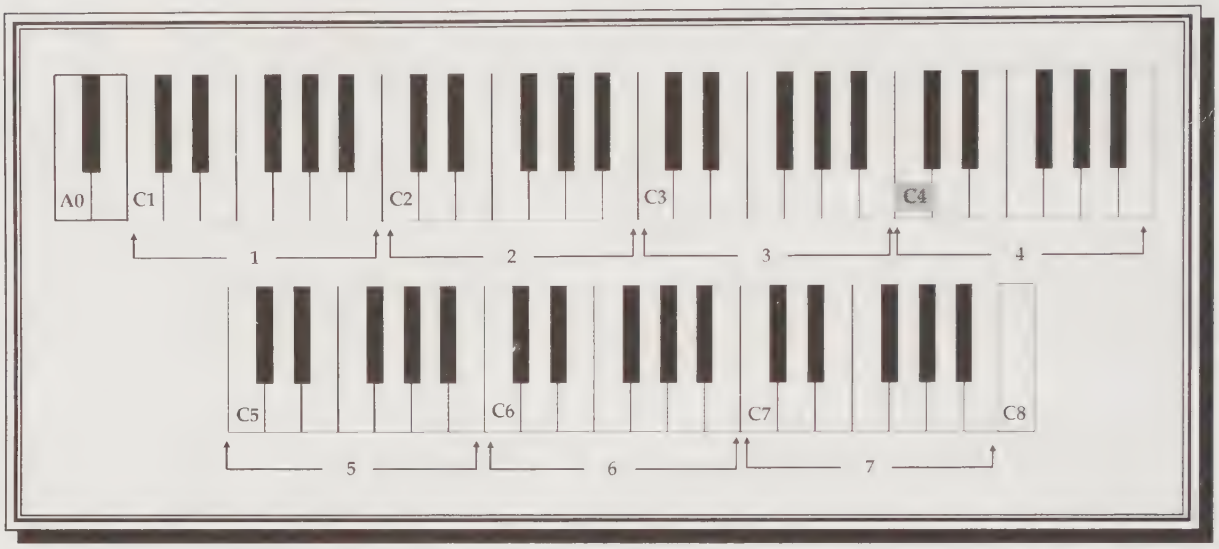
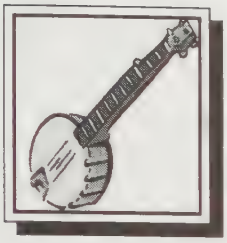


Figure 5.6 Note Names by the Octave



5.5 Playing Examples

5.5.1 Intervals on the Banjo Fingerboard

With practice, identifying intervals on the banjo fingerboard will become natural. At first you might have to stop and figure them out.

For playing examples I'm going to ask you to play a few ascending and descending intervals and relate them to common songs.

Example 5.5.1 Finding Intervals on the Banjo

I'll suggest one, and then turn you loose to find a bunch more.

1. Play the open third string. This is the note **G**.

2. Now find the note that is a perfect 4th higher on the second string.

3. You should have found it on the second string at the 1st fret. It is a **C**.

One way to find it is to count as you play the G major scale. Also, you can sing, "**Here Comes** the Bride."

Now, it's your turn to experiment a little and find some more. Here's a procedure to follow:

1. Just start anywhere, any string - any fret.

2. Pick an interval (ascending is probably easier but try some descending intervals too).

3. Find that note on some string at some fret of the banjo.

4. Check it against the sound you want to hear (like a familiar song that uses that interval).

5. Count the distance in terms of whole and half steps and refer to Figure 5.3 to see if you are correct.

At first you might think this is a bit tedious and boring but make a game out of it. You'll be surprised how quickly you will be able to visualize the fingerboard in terms of intervals! Think about improvisation and finding the melodies for familiar songs. Improvisation is "playing what you hear."

You will be learning about intervals on the fingerboard!

Figure 5.7 on the next page shows the main intervals on the banjo fingerboard starting with the root on the fourth string and with the root on the third string. Really, we're just showing the major scale (remember the major scale?) starting from those locations. In Chapter 9 we will talk about the **Nashville Number System** and playing out of a **home position**. This diagram will come in handy when "playing by the numbers."

There are several things to notice about Figure 5.7:

1. These are movable scale patterns. I have drawn them starting on the 1st fret, but they could be placed anywhere up and down the neck.

2. The square box indicates the root note. Whatever that note is determines the major scale you are playing. This will be important when we talk about movable chords in Chapter 8.

3. If the **I chord** has its root on the fourth string, then the **IV chord** has its root on the third string at the same fret.

4. If the **I chord** has its root on the third string, then the **IV chord** has its root on the second string one fret higher.

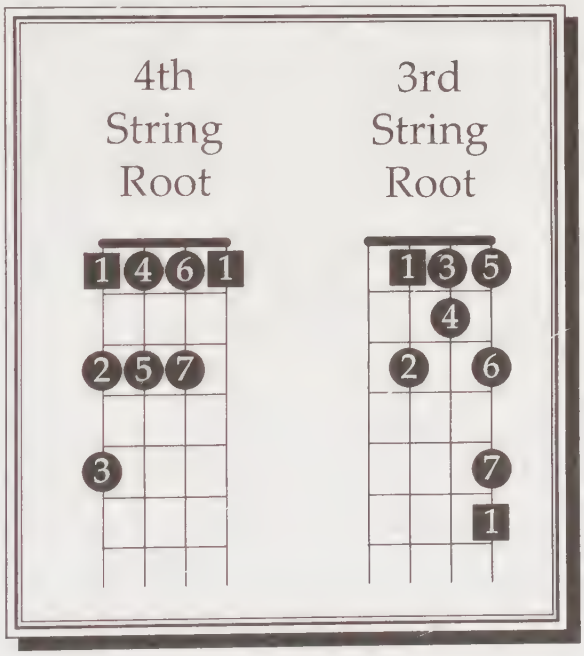


Figure 5.7 Intervals on the Banjo Fingerboard

Example 5.5.2 Sing the Intervals as You Play!

In Chapter 2 we played the melody to ***Twinkle, Twinkle Little Star***. Now, do the same thing except this time, sing it by the numbers. I'll start you out:

1 1 5 5 6 6 5 . . .

Example 5.5.3 Sing the Note Names as You Play!

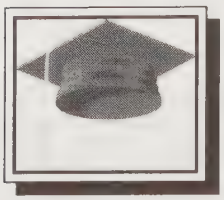
Now, do the same thing except this time, sing the note names. I'll start you out:

C C G G A A G . . .

5.6 Review Questions for Chapter 5

1. What is a musical interval?
2. If a major interval is reduced by a half step, what is it called?
3. If a minor interval is reduced by a half step, what is it called?
4. If a perfect interval is increased by a half step, what is it called?
5. On the banjo in standard G tuning, what is the interval between the second string and first string?
6. How many half steps are there in a major 3rd?
7. How far below the tonic (root note) is the 7th note of the major scale?
8. What is a common song to help remember the sound of a perfect 4th?
9. What is a common song to help remember the sound of a perfect 5th?

Chapter 6. Chord Construction



6.1 Overview: What is Harmony?

This is a big topic with lots of history behind it, but we are going to keep it pretty simple. Harmony occurs when two or more notes are sounded at the same time. It may or may not sound good. The concept of "good" is pretty subjective. Believe it or not, what sounds good to one person might sound awful to somebody else. Also, something that doesn't sound so good upon first hearing may start to sound better with repeated listening.

Very strange, I know.

If a couple of notes are close together, there could be a lot of tension in the sound. Is that bad? No way! Tension creates movement, and when it is resolved, that's a pleasurable feeling. In banjo music you will hear close harmonies all the time.

When notes are sounded at the same time we call that the **vertical** aspect of music. When they are sounded one after the other, as in melody, we call that the **horizontal** aspect of music. So, harmony has to do with the vertical aspect. Now, don't get me wrong, a banjo player may play only single

notes and still articulate the chord changes (chord progression of the song) very clearly.

We are going to think of harmony as the chords that support the melody of a song.

6.2 The Triad and Stacked Thirds

The basic **triad** or three-note chord consists of the 1st, 3rd and 5th notes of the scale that names the chord.

For example, the **C major** scale is:

C	D	E	F	G	A	B	C
1	2	3	4	5	6	7	1

So, a C major triad consists of the notes C, E and G.

In the **close voicing** form, the notes are close to each other. They don't spread out more than an octave. On the staff it looks like this:

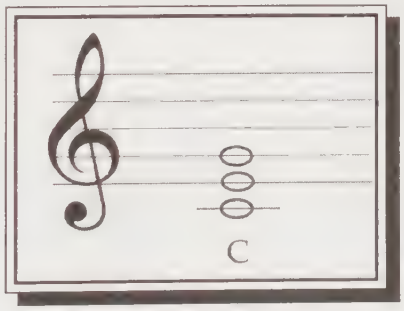


Figure 6.1 C Major Triad

Here are a couple more examples of triads. See how they look like "stacked thirds"? The dead giveaway is "line, line, line" or "space, space, space."

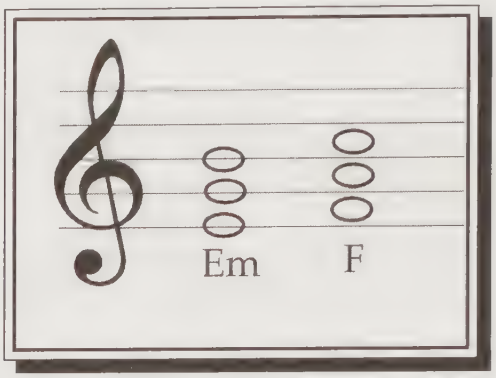


Figure 6.2 Stacked Thirds

The **E major scale** consists of the following notes:

E	F♯	G♯	A	B	C♯	D♯	E
1	2	3	4	5	6	7	1

The chord on the left in Figure 6.2 consists of the notes E, G and B. It has a G instead of G♯ so we have a flat 3rd. That makes the chord minor. We'll talk more about that in just a bit.

The **F major scale** consists of the following notes:

F	G	A	B♭	C	D	E	F
1	2	3	4	5	6	7	1

The chord on the right in Figure 6.2 consists of F, A and C. Therefore it is an F major chord.

OK so far?

6.3 Major, Minor and Seventh Chords

Now it's time to define some of the basic chords. We won't cover every possible chord, but we'll hit the important ones. This is not hard, but here's where we get specific about chord names. Below is a table listing some of the most common chords:

Chord Type	Notes from the Scale	Symbol
Major	1, 3, 5	C
Minor	1, ♭3, 5	Cm, C-
Diminished	1, ♭3, ♭5	C^{dim}, C^{0}
Augmented	1, 3, ♯5	C^{aug}, C^{+}
Suspended	1, 4, 5 resolving to 1, 3, 5	C^{sus}, C^{sus4}
Major 7th	1, 3, 5, 7	C^{maj7}, C^{M7}, $C^{\Delta 7}$
Dominant 7th	1, 3, 5; ♭7	C^{7}
Minor 7th	1, ♭3, 5, ♭7	Cm^{7}, $C\text{-}^{7}$
Minor-Major 7th	1, ♭3, 5, 7	Cm^{M7}, Cm^{maj7}
9th	1, 3, 5, ♭7, 9	C^{9}

6.4 Open Voicing

Chords in an **open voicing** have their notes spread apart more than **close voicing** chords. They cover more than an octave on the staff. Figure 6.3 shows both close and open voicing for a **C major** chord. Notice that the notes are the same except some of them are in a higher octave.

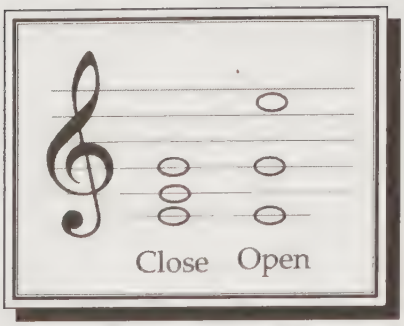


Figure 6.3 Close and Open Voicing for a C Major Chord

6.5 Chord Inversions and X/Y Chords

What happens if you have all the notes of a chord, but the root note is not the lowest note? Then we call it an "inversion." If the chord is made up of four notes like the 1, 3, 5, and 7 of the scale, then any of them can be in the bass. Here are the possibilities:

1. Root Position - root note is the lowest note
2. 1st inversion - the 3rd is in the bass
3. 2nd inversion - the 5th is in the bass
4. 3rd inversion - the 7th is in the bass

Figure 6.4 shows some examples of inversions for the **C^{maj7} chord**. Keep in mind that **C^{maj7}** has the following four notes:

C	E	G	B
1	3	5	7

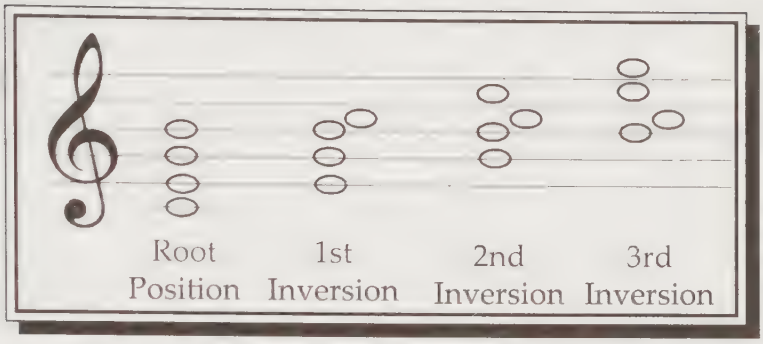


Figure 6.4 Chord Inversions

When you see a chord written as **X/Y** it means that it is an **X chord** with a **Y** as the lowest note. For example C/G means it's a C chord with a G in the bass.

Sometimes you will see an X/Y chord where the bass note is a non-chord tone. This usually happens in walking bass lines. It's a common way to transition between chords.

6.6 Chord Extensions

Up till now we have numbered the notes of the major scale just using the numbers 1 - 7 like this:

C	D	E	F	G	A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	1	2	3	4	5	6

We called the notes 1, 2, 3, 4, 5, 6, 7, and back to 1. But we can keep on counting like this:

C	D	E	F	G	A	B	C	D	E	F	G	A
1	2	3	4	5	6	7	8	9	10	11	12	13

So, if a C chord has a **D** note in the second octave we can call it a **C9** (or Cadd9 if it doesn't have the ♭7).

With an **F** it would be a **C11**, and with an **A** it would be a **C13**.

Now, very often if a C chord has a **D** in the first octave it is called **Csus2**, but many people would call it a **C9** even if the **D** were in the first octave.

6.7 Partial Chords

6.7.1 Why Partial Chords?

Chords can get pretty complex and have lots of notes. On a piano you can play ten notes at once, but on the banjo only five. In real life playing situations we often leave out some notes and end up with partial chords.

Because of the intervals between strings it may not be possible to play every note of a chord. Also, just for convenient fingering, we may drop some notes and make it a partial chord.

When playing a banjo arrangement we play the melody and fill-in with harmony notes and banjo rolls. In those cases, the left-hand fingering might not look anything like the chord. Often my banjo students will say, "There is a **D** written above the tab, but I don't see anything like a **D** chord in the tablature." I have to tell them, "The chord name is there because the chord progression of the song calls for a **D** chord at that point. We are not actually fretting all the notes of a **D** chord, but if you were playing with a guitar player, that's the chord he would be playing. Also, if we were just vamping (improvising accompaniment) we would probably be holding that chord."

6.7.2 Which Notes to Leave Out?

If you have to play a partial chord, which notes are important to keep and which ones can be left out?

Right away people think, "You have to play the tonic because that's the note that names the chord. That's the main note!" True, but the tonic is usually the first one to go. In a band situation, somebody else (especially the bass player) is going to play that note. The fifth is probably the next one to go. The two most important notes that convey the sound of the chord are the third and the seventh.

1. The third tells us whether the chord is major or minor, depending on whether the third is flatted or not.
2. The seventh tells us whether the chord is a major 7th or a dominant 7th.

6.8 Each Chord Has a Voice

Music is all about sound. You may get by with a handful of simple chord shapes, but well-chosen chords can have a powerful emotional effect on the listener and you, the player.

Each chord type has a special mood or character - a voice. Of course, the feeling of any given chord depends on where you are coming from and where you are going to musically, but let's look at some general characteristics of chord types. Having an understanding of each chord's feeling can be a great help if you want to substitute chords or introduce chords to achieve that special expression. These ideas are especially important to songwriters.

Note: The mood of any chord is pretty subjective.
What sounds restful to one person may not be restful to someone else.
What we present below are just general characteristics.

If you are trying to convey a special feeling at a certain point in a song you can use dynamics and rhythm, but one of the most powerful forces is the character of the chord. Do you want the listener to feel some tension that needs to be resolved? Do you have him suspended "up in the air" with the promise of letting him down safely? Have you tricked your listener with an unexpected chord change? These are all wonderful things to hear and experience.

Here's a brief summary:

6.8.1 Major and Minor Chords

Major chords sound happy and uncomplicated. They sound simple because they are simple.

Chord	Notes from the Scale		
Major Triad	1	3	5

Minor chords sound sad or serious. Songs written in minor keys usually are sad or serious.

Chord	Notes from the Scale		
Minor Triad	1	♭3	5

Try the simple playing example shown in Figure 6.5 below. Make an **A major** chord and then move the 3rd down a fret (flat the 3rd), and then go back up. Go back and forth between the major triad and minor triad and listen to the difference.

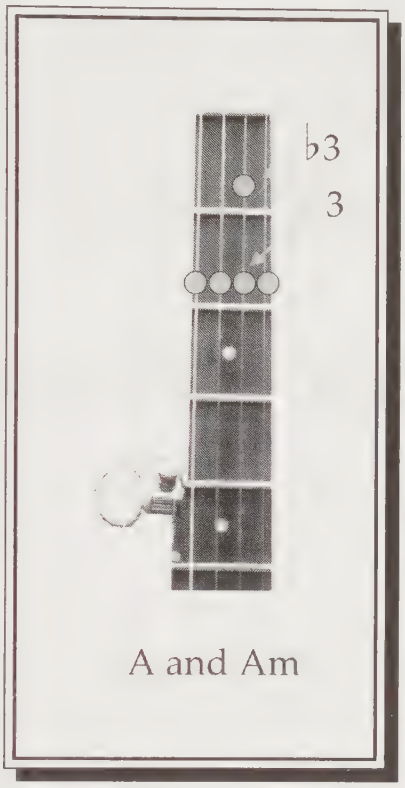


Figure 6.5 Listen to Major and Minor Chords

6.8.2 Seventh Chords

Major 7th chords sound more complex. They are thoughtful and soft. You will often hear them in jazz compositions.

Chord	Notes from the Scale			
Major 7th	1	3	5	7

Minor 7th chords are moody and contemplative.

Chord	Notes from the Scale			
Minor 7th	1	♭3	5	♭7

Dominant 7th chords are strong and have some tension that tends to push things along. They are often used to transition to the next chord.

Chord	Notes from the Scale			
Dominant 7th	1	3	5	♭7

6.8.3 Diminished Chords

Diminished chords are dark and mysterious.

The Diminished Triad

Chord	Notes from the Scale		
Diminished Triad	1	♭3	♭5

Half-Diminished 7th chords are often called **minor seventh flat-five** (m7 ♭5) chords. The symbol used for half-diminished chords is a circle with a slash through it. For example, **C^{Ø7}** would contain C, E♭, G♭ and B♭.

Chord	Notes from the Scale			
Half-Diminished	1	♭3	♭5	♭7

Fully-Diminished 7th chords

Many songwriters don't care for double flats, so they will write fully diminished 7th chords as **minor sixths with a flat-five** (m6 ♭5). The symbol for a fully-diminished 7th chord uses a little circle as a superscript. In the table below the B♭♭ sounds the same as A.

Chord	Notes from the Scale			
C°7	C	E♭	G♭	B♭♭
Cm6♭5	C	E♭	G♭	A

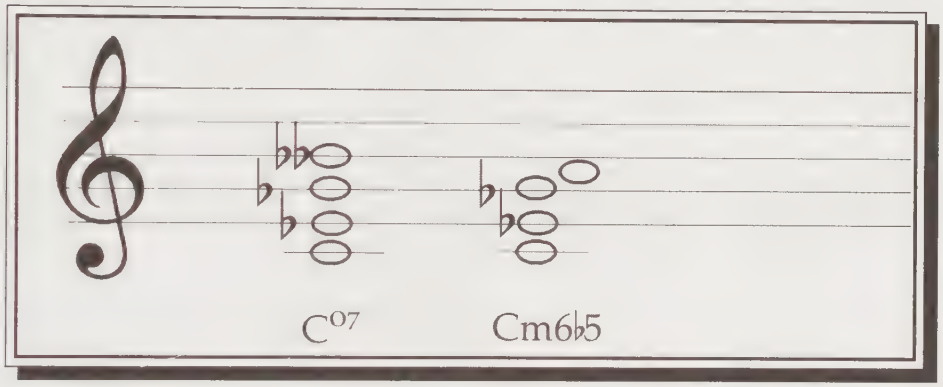


Figure 6.6 Fully-Diminished C Chord

An interesting thing about diminished 7th chords is that they consist of stacked minor 3rds. Each note is three half steps from its neighbor. You might be thinking, "What's so interesting about that?" Well, because of this structure, a couple of interesting things result:

1. The chord can take on the name of any of the four notes, and
2. It repeats every three frets going up the neck.

You might remember the old movies where the girl is tied to the railroad tracks and a train is coming. The tension builds and builds until the hero comes and rescues her! What you would typically hear for background

music is a diminished run moving up the neck. Try the following and see if you can hear the train coming.

I only show one position because as you move the form up the neck, they overlap. Simply put the bar where your pinky used to be.

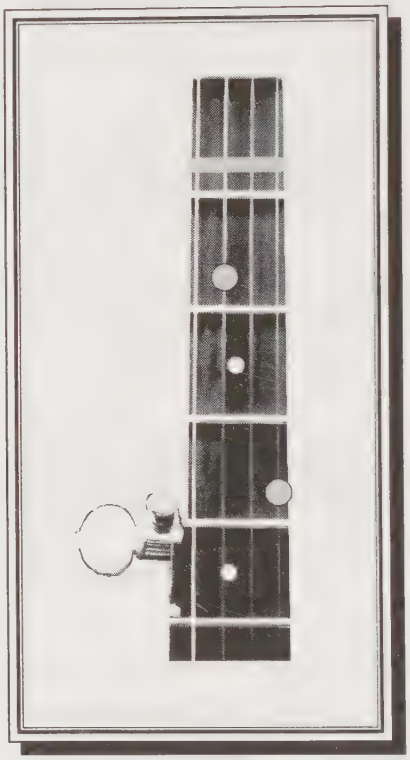


Figure 6.7 Diminished Run

6.8.4 Suspensions

Suspended 4th chords substitute the fourth note of the scale for the third. This creates some suspense that is usually resolved by going back to the original triad. Sometimes a suspension is resolved to the minor triad.

Chord	Notes from the Scale		
Sus4	1	4	5
Resolved to Major Triad	1	3	5
Resolved to Minor Triad	1	♭3	5

Suspended 2nd chords substitute the second note of the scale for the third. These also have some tension that wants to be resolved by moving to the basic triad.

Chord	Notes from the Scale		
Sus2	1	2	5
Resolved to Major Chord	1	3	5

6.8.5 Augmented Chords

Augmented chords are suspenseful and tend to create movement.

Chord	Notes from the Scale		
Augmented	1	3	♯5

6.8.6 Walking the Root Down

Listen to the interesting sounds you get as you walk the root down the first string. We are going to walk the root note of a G major chord down one fret at a time and listen to the character of each chord as it changes. Start with the G note on the first string, 5th fret and walk it down one fret at a time.

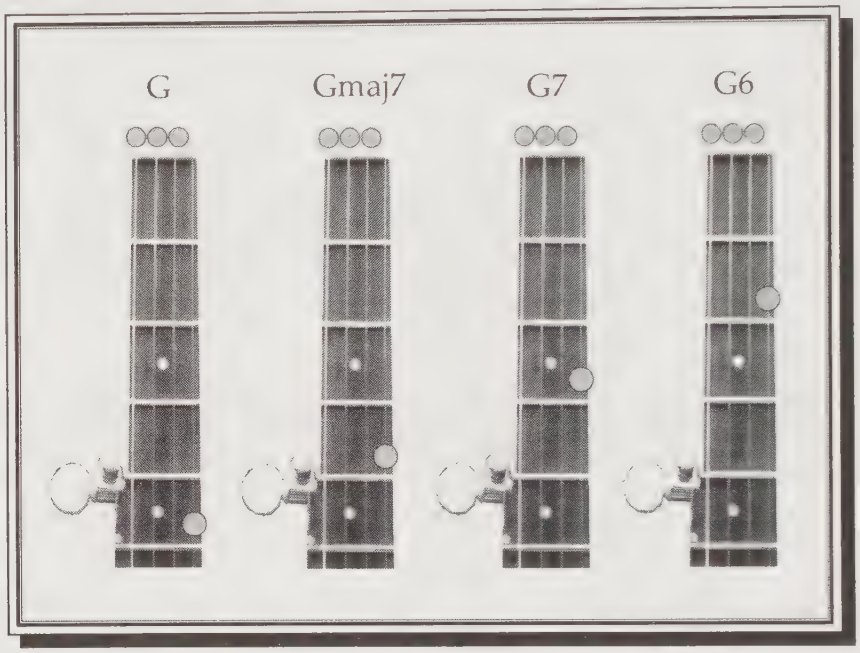


Figure 6.8 Walking the Root Down

Now, is that amazing or what! Can you hear the sound of Gmaj7, G7 and G6? Play this several times and start thinking about variations. I know you will come up with something interesting!

6.9 Playing Examples

6.9.1 Singing the Major Triad

Take the three basic banjo major chord forms and, as you play them sing, "1, 3, 5." It's time to get used to the sound of a triad and to determine where each scale tone is in these three basic forms.

Sound intimidating? Well, it's not. In fact, you can have a lot of fun with this example and become a lot more familiar with the sound of chords and how the chord tones relate to each other.

Here's how it works. For each chord:

1. Strike the lowest root note.
2. Sing "1, 3, 5"
3. Then play the other strings.
4. Figure out the note numbers for the other strings.

Figure 6.9 below shows the root of the F form on the fourth string. So, do the following:

1. Strike the fourth string
2. Sing "1, 3, 5" based on that tone.
3. Determine if the other strings spell out "1, 3, 5"
4. If not, what order are they in?

Now do the same thing for the other two forms.

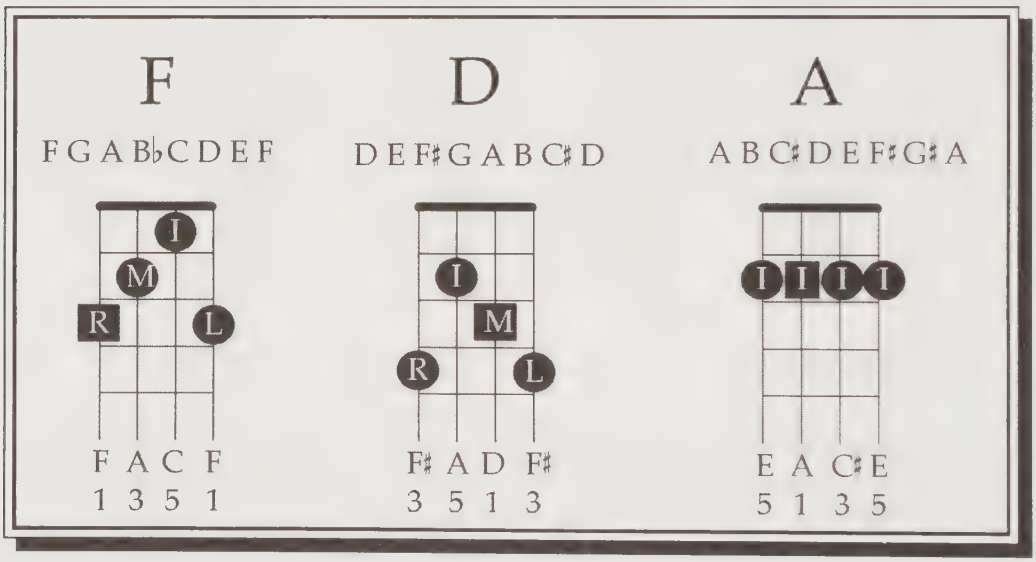


Figure 6.9 Singing the Major Triad

6.9.2 Resolving Suspended Chords

Let's play a **Gsus4** chord and listen to it resolve to the major triad.

Play an open G chord and then add a finger on and off the second string first fret. You are replacing the 3 with the 4. When fretting the second string can you hear how there is some tension that wants to be resolved? Can you hear the "amen" sound?

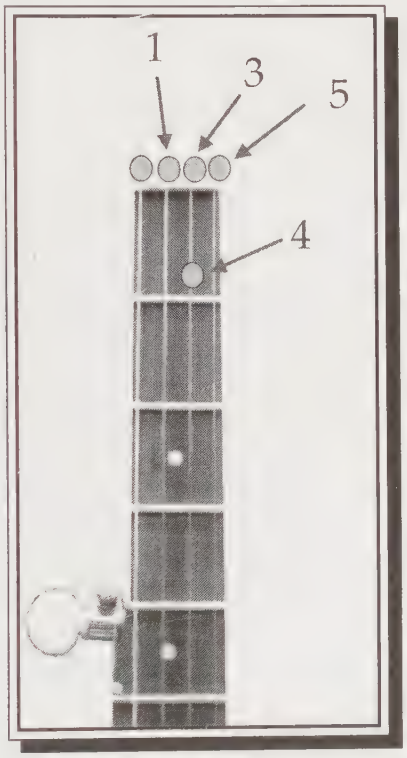
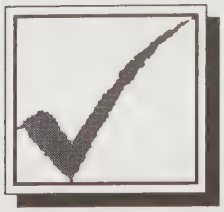


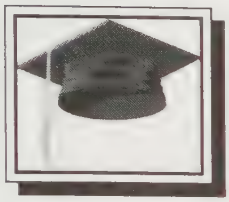
Figure 6.10 Resolving Gsus4



6.10 Review Questions for Chapter 6

1. What three notes make up the basic triad?
2. What notes make up the following chords?
    - Major
    - Minor
    - Diminished
    - Augmented
    - Major 7th
    - Dominant 7th
3. For an **X/Y** or **slash** chord:
    - What does the **X** mean?
    - What does the **Y** mean?
4. What note is in the bass for the following chord inversions?
    - Root position
    - First inversions
    - Second inversion
    - Third inversion
5. For 7th chords, which two notes are most influential in defining the character of the chord?

Chapter 7. Chords in a Key



7.1 Stacked Thirds: The Triad

You may have heard that, in any given key:
1. The I, IV and V chords are major
2. The ii, iii and vi chords are minor, and
3. The vii chord is diminished

Where does that come from? Well, let's have a look at stacked thirds again. We are going to build a chord based on each scale degree and see what we get. We'll use the key of C, but the same reasoning will work for any key.

Figure 7.1 below shows the C major scale and a chord (triad) built on each note of the scale. Let's look at each chord and determine if it is major, minor, diminished or augmented. As a reminder, here are the major scales based on each note:

C	D	E	F	G	A	B	C
D	E	F♯	G	A	B	C♯	D
E	F♯	G♯	A	B	C♯	D♯	E
F	G	A	B♭	C	D	E	F
G	A	B	C	D	E	F♯	G
A	B	C♯	D	E	F♯	G♯	A
B	C♯	D♯	E	F♯	G♯	A♯	B
1	2	3	4	5	6	7	1

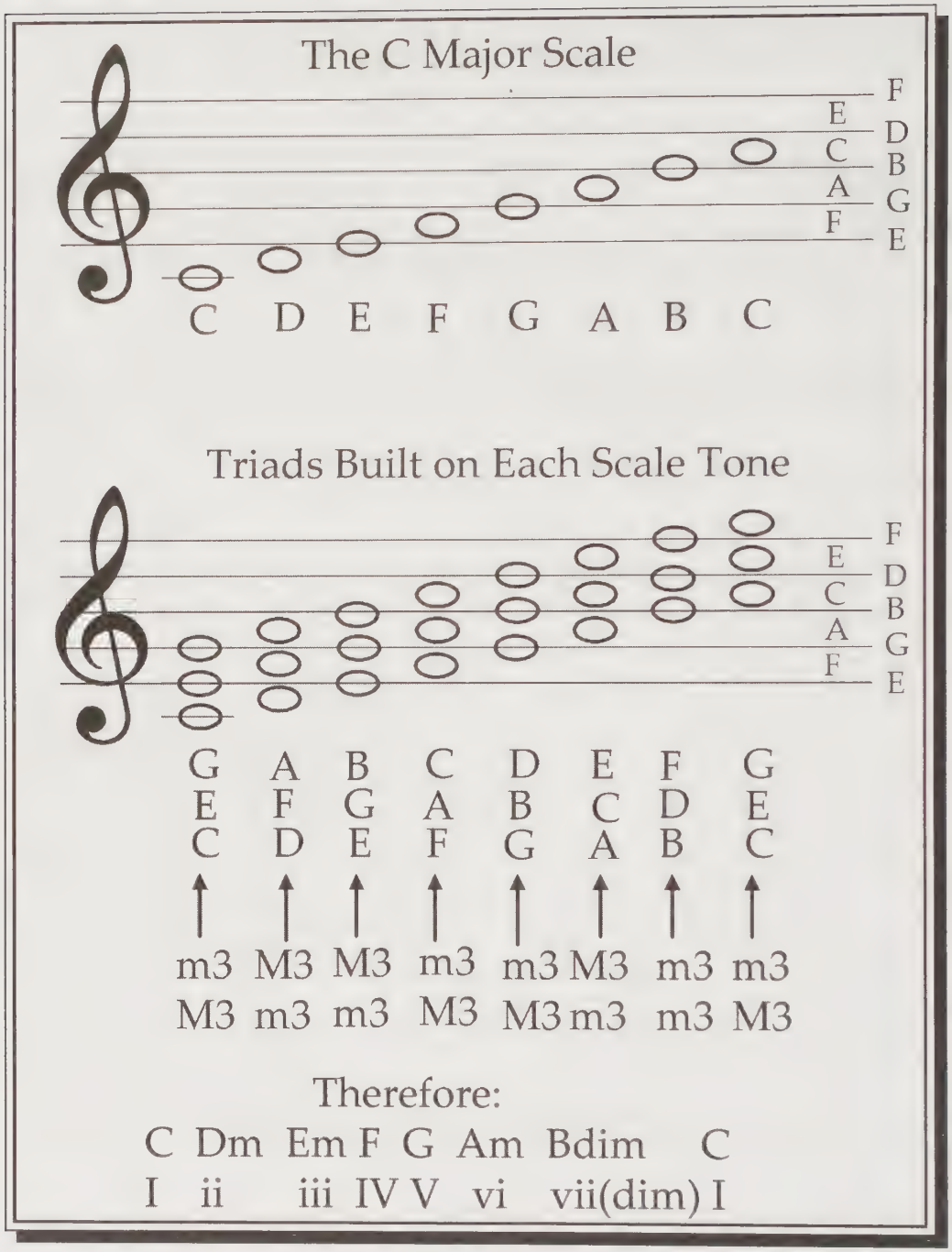


Figure 7.1 Chords in a Key

Looking at the chords one at a time:

1. The first chord has C, E and G. These are the 1, 3 and 5 of the C major scale. Therefore it is a **C major** chord.

2. The second chord has D, F, and A. These are the 1, ♭3 and 5 of the D major scale. Therefore it is a **D minor** chord.

3. The third chord has E, G and B. These are the 1, ♭3 and 5 of the E major scale. Therefore it is an **E minor** chord.

4. The fourth chord has F, A and C. These are the 1, 3 and 5 of the F major scale. Therefore it is an **F Major** chord.

5. The fifth chord has G, B and D. These are the 1, 3 and 5 of the G major scale. Therefore it is a **G Major** chord.

6. The sixth chord has A, C and E. These are the 1, ♭3 and 5 of the A major scale. Therefore it is an **A minor** chord.

7. The seventh chord has B, D and F. These are the 1, ♭3 and ♭5 of the B major scale. Therefore it is a **B diminished** chord.

Now, we did this analysis for the key of C, but it would work the same for any other key.

Isn't that exciting!

7.2 Another Way to Look at It

We just did an analysis of the chords in the key of C by looking at the notes in each chord. Here's another way to think about it.

We can look at the thirds involved, and define the four basic chord types:

1. Major triad = M3 with a m3 above it.
2. Minor triad = m3 with a M3 above it.
3. Diminished triad = m3 with another m3 above and
4. Augmented triad = M3 with another M3 above it.

That's what the bottom portion of Figure 7.1 shows.

7.3 Stacked Thirds: Seventh Chords

We won't go into a big, long analysis of this topic, but what if you see four stacked thirds instead of just three? Then you are looking at a seventh chord, not just a triad. It's kind of like this:

1 2 **3** 4 **5** 6 **7** 1

Figure 7.2 shows how seventh chords in the key of C would look. Here's a quick summary:

Chord	Name	Notes				Note Names			
Imaj7	Cmaj7	1	3	5	7	C	E	G	B
ii7	Dm7	1	♭3	5	♭7	D	F	A	C
iii7	Em7	1	♭3	5	♭7	E	G	B	D
IVmaj7	Fmaj7	1	3	5	7	F	A	C	E
V7	G7	1	3	5	♭7	G	B	D	F
vi7	Am7	1	♭3	5	♭7	A	C	E	G
vii°	B° Bm7(♭5)	1	♭3	♭5	♭7	B	D	F	A

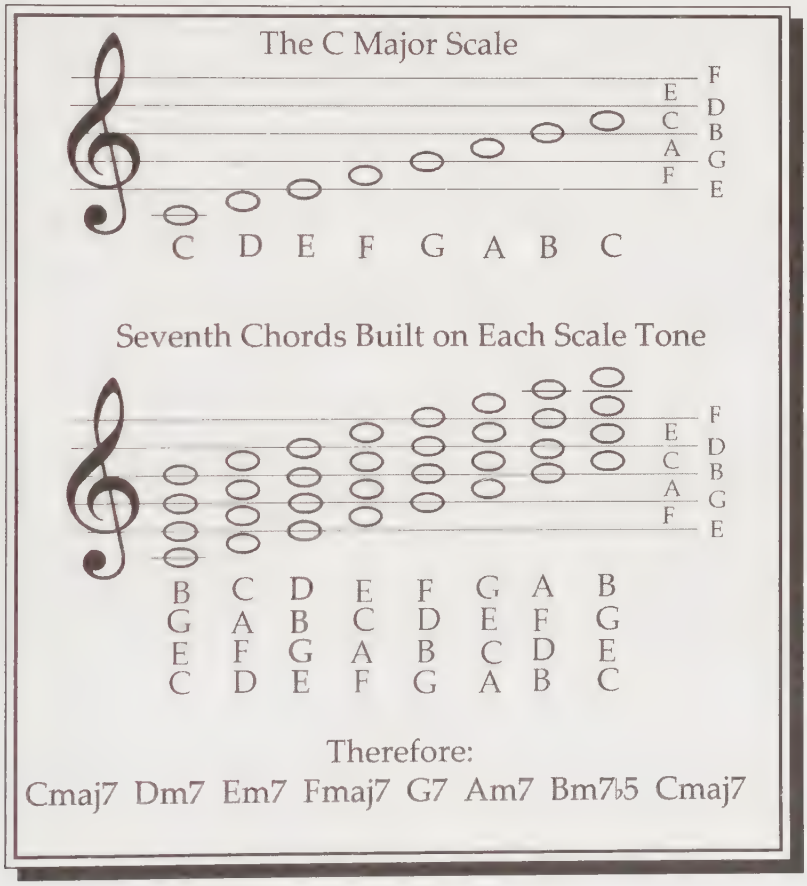


Figure 7.2 Seventh Chords

7.4 You Are Not Locked into Anything: Accidentals

You might be wondering, "Well, how can I have chords other than these in a song?" That's easy.

Just do it!

It's all about the sound. If you want the sound of a certain chord at some point in the progression but it's outside the key, no problem. In ragtime music we often make the II chord and VI chord major to give the song a brighter sound.

When you see accidentals in the music, either the melody or a chord is outside the key signature. It's done all the time, and there aren't any music police who will come around and take your banjo away.

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7.5 Playing Examples

Example 7.5.1 Chords in the Key of G

For this example we are going to play the chords in the key of G using the "A Form" or "Barred Form." This is an easy one, because we simply walk the bar up the neck making adjustments where necessary.

Notice that, in this form, the root is on the third string and the 5 is in the bass (2nd inversion). Also, notice the top three notes are "stacked thirds." As we walk the bar up the neck, the root note on the third string spells out the G major scale:

G A B C D E F♯ G

To make chords built on each scale tone we simply walk the bar up the neck making adjustments so it fits the key. In the notation you will see that there are no accidentals. This means all the notes are in the key.

As a reminder, here are the scales involved:

G	A	B	C	D	E	F♯	G
A	B	C♯	D	E	F♯	G♯	A
B	C♯	D♯	E	F♯	G♯	A♯	B
C	D	E	F	G	A	B	C
D	E	F♯	G	A	B	C♯	D
E	F♯	G♯	A	B	C♯	D♯	E
F♯	G♯	A♯	B	C♯	D♯	E♯	F♯
1	2	3	4	5	6	7	1

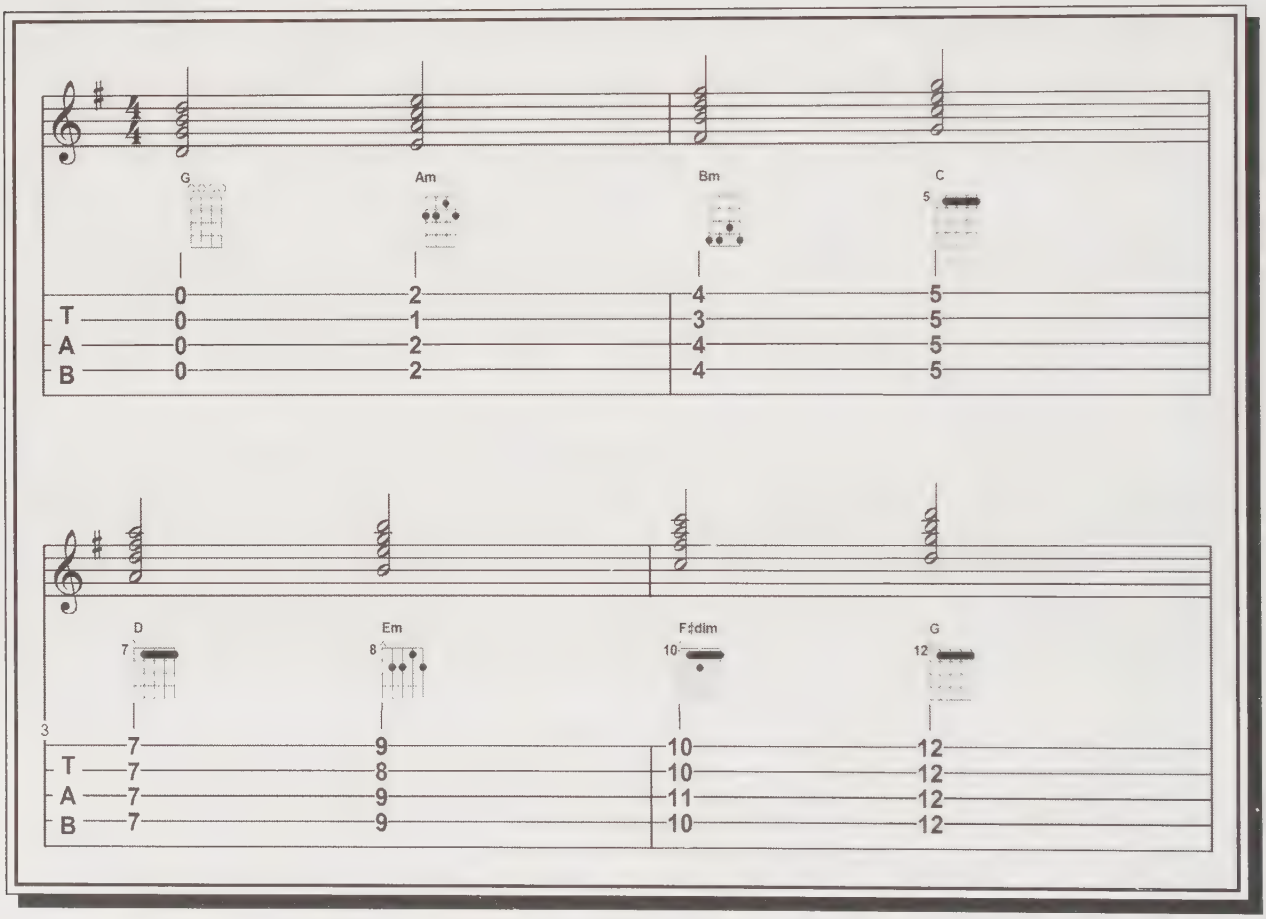

Figure 7.3 Chords in the Key of G

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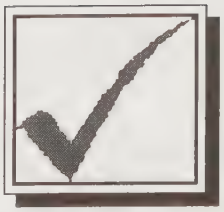
Example 7.5.2 Identify the Note Names

As you play these chords, identify the note names and check to see that they are, in fact, the right notes of the appropriate scale.



7.6 Review Questions for Chapter 7

1. In any major key, the 1, 4 and 5 chords are _____.
2. In any major key, the 2, 3 and 6 chords are _____.
3. In any major key, the 7 chord is _____.
4. In terms of stacked 3rds, a M3 with a m3 above it forms a _____ triad.
5. In terms of stacked 3rds, a m3 with a M3 above it forms a _____ triad.
6. In terms of stacked 3rds, a m3 with a m3 above it forms a _____ triad.
7. In terms of stacked 3rds, a M3 with a M3 above it forms a _____ triad.

Chapter 8. Movable Chords

8.1 What are Movable Chords?

OK, I don't mean to be insulting when I say "movable chords" are chords that can be moved.

Think about it, if you are holding a chord that has some open strings and you move that form up the neck what happens? Of course, the fretted strings get moved to the new position, but the open strings don't change. They might sound OK in the new position or maybe not. They will probably not be part of the new chord.

So what I am saying is that for a chord to be movable you have to be in control of (fretting) all the strings you intend to play in the new position. Even chords that don't use all of the strings are movable as long as you are fretting all of the strings you intend to play.

What happens when you move a chord up or down the neck? It's still the same **chord form** (major, minor, 7th, whatever) except its name changes. You might be asking, "What does the name change to?"

For any given form, the chord name is the name of the note that occupies the root position. So, it's important to think about the root. Now, that may sound pretty mysterious, but there are only three different chord forms. And I bet you already know them!

8.2 Movable Chords for the Banjo

There are three movable forms for the banjo. They are called the **F form**, the **D form** and the **A form**. They could be called by other names but those are the lowest positions where they are commonly used.

In fact, many times I call the **F form** the "G form" because I mostly use it with the root on the fourth string at the fifth fret to make a G chord.

Also, I typically call the **A form** the "Bar form" because that's what it is. It's a bar. In the key of G, very commonly it is used it at the 5th fret to make a C chord.

As shown in Figure 8.1, the basic form or "shape" remains the same except we modify it to create a minor or a 7th chord.

For a minor chord we flat the 3rd.
For a 7th chord we add the ♭7.

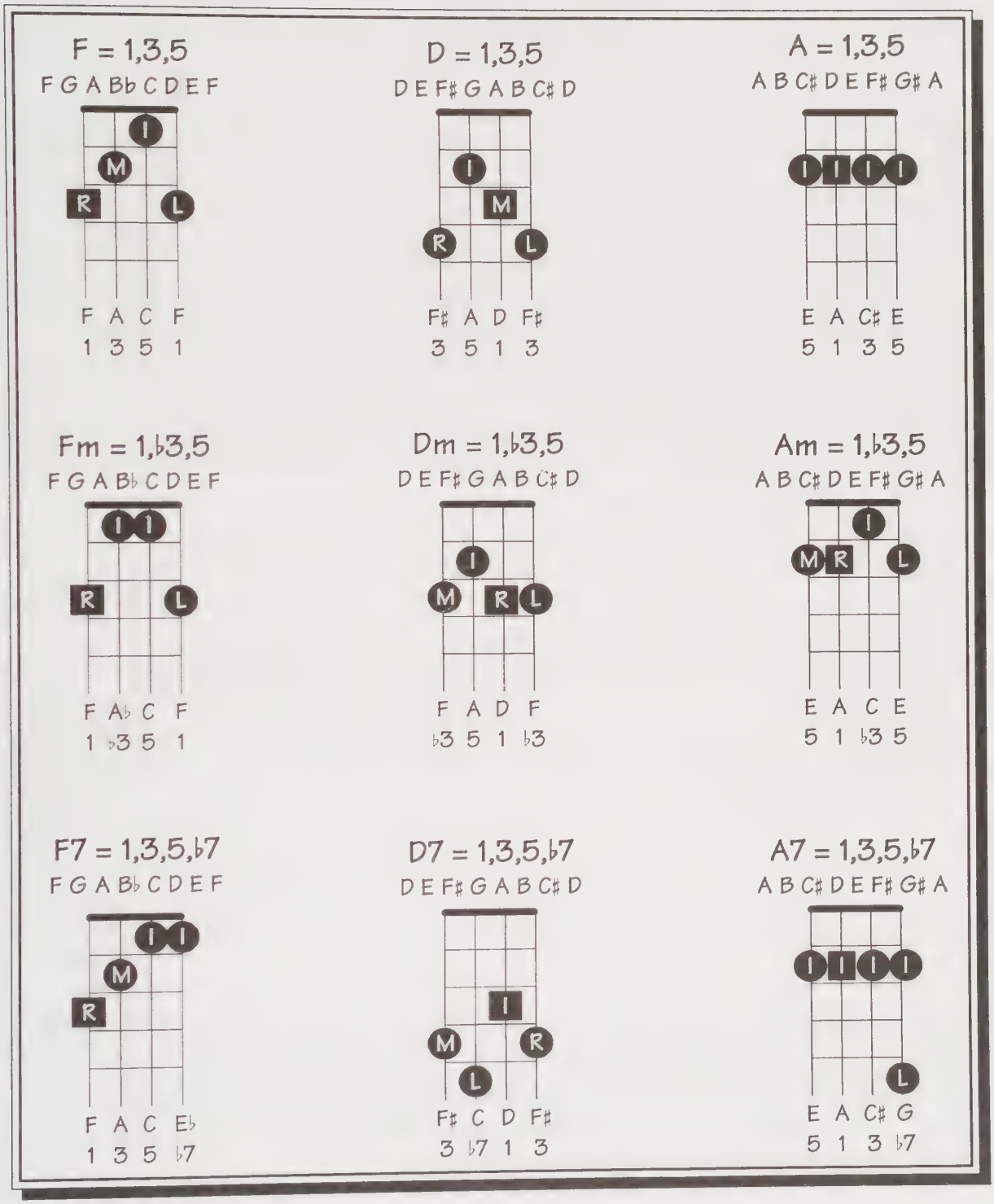


Figure 8.1 Movable Chords

8.3 Using a Capo

Some people call a capo a "cheater" but using a capo isn't really cheating. There are many good reasons to use a capo. Here are a few that come to mind:

1. **Playing an arrangement in a different key.** Maybe you learned a solo banjo arrangement in the key of G but the fiddle player wants to play it in the key of A. Just capo 2 and play the arrangement you know.

2. **Creating a tighter sound.** A capo can remove some of the harmonics typically heard with open strings. A lot of fingerpicking ragtime songs sound better with a capo.

3. **To match your singing voice.** Every chord form has certain licks that fall out almost automatically (bass runs, slides and hammers) and you want to play an arrangement in a certain key to take advantage of them. But it's way too high or too low for you to sing in that key. Enter the capo!

4. **To slacken the strings.** A lot of the old blues guys used to tune down a whole step and capo on the second fret.

5. **To adjust the long-neck banjo.** The long neck banjo is three frets longer than the standard scale length and typically tuned to an open E. To play it like a regular banjo, capo the third fret.

Hint: If the song is way too high, and trying to sing it an octave lower is way too low, then capo somewhere around the fourth fret.

So how does a capo work? It simply transposes everything up by the same number of semitones (half steps) as the fret you place it on.

For the banjo, you have to do something with the fifth string. Typically people use a fifth string capo or some spikes to capo it up the same amount. But keep in mind almost any chord tone will work just fine for the fifth string. You can retune the fifth string a semitone without any problems, but if raised more than a whole tone, you risk breaking the string.

Figure 8.2 shows the resultant key when you capo from open (no capo) to the fifth fret for all twelve major keys. It is pretty unusual to capo much above the fifth fret.

	Capo Position					
	Open	Capo 1	Capo 2	Capo 3	Capo 4	Capo 5
Key	C	C♯/D♭	D	E♭	E	F
	C♯/D♭	D	Eb	E	F	F♯/G♭
	D	E♭	E	F	F♯/G♭	G
	E♭	E	F	F♯/G♭	G	A♭
	E	F	F♯/G♭	G	A♭	A
	F	F♯/G♭	G	A♭	A	B♭
	F♯/G♭	G	A♭	A	B♭	B/C♭
	G	A♭	A	B♭	B/C♭	C
	A♭	A	B♭	B/C♭	C	C♯/D♭
	A	B♭	B/C♭	C	C♯/D♭	D
	B♭	B/C♭	C	C♯/D♭	D	E♭
	B/C♭	C	C♯/D♭	D	E♭	E

Figure 8.2 Capo Chart

8.4 Playing Examples

Here are some examples of movable chords to try. Approach this example by taking the following three steps:

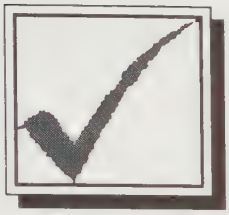
1. Figure out where the **root** note is and the name of the chord.
2. Move the form to the right position for the new **chord name**.
3. **Modify** the form to make it a minor, 7th, diminished, etc.

This is a good exercise for understanding chord forms, and you will be able to play chords all over the neck. Once you have this system down, you'll be able to throw that old chord book out the window!

Also, you'll be surprised - many chords with very complex names turn out to be pretty easy to play.

For this exercise we are just concerned about the first four strings. The chord diagrams are provided in Chapter 11.

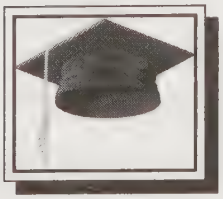
1. Use the F form to make an A.
2. Use the A form to make a Bm.
3. Use the D form to make an Em.
4. Use the A form to make a C7.
5. Use the F form to make a Gm.
6. Use the A form to make a G.



8.5 Review Questions for Chapter 8

1. What is a movable chord?
2. How do we know what to name the chord in its new position?
3. If you play an A chord by barring across the second fret, where would you move that bar to play a D♭?
4. On what string is the root of the F form? Where would you place the root note to make an A chord?

Chapter 9. The Nashville Number System



9.1 Play by the Numbers

9.1.1 Introduction

Note: There is a lot more to the Nashville Number System than we will discuss here. The goal of this chapter is to simply give you an introduction to "playing by the numbers."

If you were given a lead sheet with a bunch of numbers on it but it didn't have any actual chord letter names, would you know what to do with it?

If you were playing off that same chart and the session director said:

> "Key of C, here we go, 1 2 3 . . . Oh wait,
> The singer says she needs it in the key of E♭.
> Here we go, 1 2 3 4 . . ."

Would you be comfortable playing in the new key?

It may take a little practice, but by the time we finish this chapter you will be!

The Nashville Number System (NNS) is a convenient way of charting out the chord progression of a song using the scale degree on which each chord is built. Neal Matthews and Charlie McCoy first developed it back in the 1950s.

Instead of using Roman numerals, the NNS typically uses the regular numbers we are all used to.

9.1.2 What If the Chord Is Outside the Key?

Just as with standard notation we can add accidentals and extensions to the numbers. For example, the numbers for the **E** major scale are:

E	F♯	G♯	A	B	C♯	D♯	E
1	2	3	4	5	6	7	1

If we want a **Cm** instead of a **C#m** we would write it as **♭6-**

9.1.3 Advantages of the Nashville Number System

The beauty of the Nashville Number System is that the same chart can be used for any key! All the players need to know is where the "home position" is and where the roots of the other chords are relative to that position. The chord progression for a song is not going to change just because you have changed key, and if the song modulates up at some point (which a lot of songs do) you just move to the new "home position."

Another nice feature is that it makes writing down a song's chord progression from a recording easier because you don't need to know the

key. You just need to be able to hear the intervals and chord qualities involved. OK, that takes a little experience and some **ear training**.

Of course, it's good to know the names of all the chords in every key, but if you know where the other chords are with respect to the tonic, you can "play by the numbers" in any key. Also, you can adapt to a new key instantly.

At first you might ask, "How can playing by the numbers be easier than the session leader simply giving me the chord names?" Fair question. Hopefully, you'll be convinced by the time we're done with this chapter.

9.2 Where's the Root?

In each chord form all of the notes have their place. They are all important, but the most important one is the **root** or **1** of the chord. Knowing where the root is will allow you to play any chord in any key and move between them smoothly and quickly.

> If you begin thinking in terms of **patterns** instead of specific chord names, you will start seeing **relationships** between specific places on the fingerboard; you will also start seeing **chord shapes** on the fingerboard.

Sound spooky? Well, it is (sort of).

9.3 NNS Notation

In this system, chords are described pretty much as in standard chord charts except that **chord numbers** are used instead of **letter names**. This is the key to making a NNS chart work for any key.

Typical examples for the key of **C** could include:

Chord	Extension	Standard Notation	NNS Notation
Major	no extension	C	1
Minor	m, -	Em, E-	3-
Minor 7th	m7, -7	Am7, A-7	6-^{7}
Dominant 7th	7	G7	5^{7}
Augmented	+	F^{+}	4^{+}
X/Y	no extension	C/E	1/3

9.4 The Relative Minor

What if the song is in a minor key?

Every major key has a relative minor. These two keys have the same key signature. That means they have the **same notes**!

For example, the relative minor to **C major** is **A minor**. Their key signatures are the same (no sharps or flats). If you play the **C major** scale starting and ending on **A**, you will be playing the **A pure minor** scale. Same notes, but because the focus is on **A** instead of **C,** it has a completely different sound. Here's what the two scales look like:

C Major Scale							
C	D	E	F	G	A	B	C
A Minor Scale							
A	B	C	D	E	F	G	A

In Nashville, it is common practice to chart out minor songs in their relative major key. So, if a song is in **A minor** it can be charted out in **C major**.

Notice that the minor scale starts and ends on the 6th note of its relative major. To change from one to the other just keep in mind that:

1. The relative minor is 1 1/2 steps (3 frets) below the major.
2. The relative major is 1 1/2 steps (3 frets) above the minor.

To find the relative minor from the major key you could count up to the 6th note or (much simpler in my opinion) just count backwards by three.

From **C** you could count up by six to **A**, or simply count backwards by three to A. So you would count, "C, B, A." This works for any set of major and relative minor keys. So, if a song sounds like it is in a minor key, here's what you do to find it's relative major:

1. Find the **tonic** or **1** note.
2. Count up three half steps.
3. That is the name of the relative major key.

We haven't talked much about minor keys in this book, but in Chapter 10 we'll discuss minor keys and modes a little bit more.

9.5 Playing out of the "Home Position"

So, here's the secret. Ready?

Think of "the key" as a specific location on the fingerboard. We are going to picture the root of the **1** chord on a specific fret of the fourth string or the third string. All the other chords are relative to that home position! Sound exciting?

Here's where we visualize the fingerboard with all the major, minor, 7th, and diminished chords as forms or shapes with their roots relative to that one location that I call the "home position" or "key note."

> You will start to see the fingerboard differently. Visualizing chord progressions, as patterns may be a big shift in perspective!

All of the things we have talked about regarding intervals and chord forms come together here. Don't worry; we'll play some examples!

9.6 The 12-Bar Blues

The 12-bar blues has a fairly simple and predictable form, typically played in 4/4 time. Let's use this form to start playing by the numbers.

The progression consists of 12 measures arranged in three sets of four bars. Here's a way to visualize the form:

Measure 1	Measure 2	Measure 3	Measure 4
Verse (Call)		Response (Fill)	
Measure 5	Measure 6	Measure 7	Measure 8
Verse (Call)		Response (Fill)	
Measure 9	Measure 10	Measure 11	Measure 12
Conclusion		Turnaround	

The following is a typical 12-bar progression. Sometimes, the first four bars are all just the **1** chord. When we go to the **4** chord in the second measure it's called a "quick change." Of course, there are lots of variations on this theme.

1	4	1	1
4	4	1	1
5^7	4	1	5^7

For example, if the song were in the key of G the progression would be:

G	C	G	G
C	C	G	G
D7	C	G	D7

The following example is in the "call-response" format where the lyrics call out in the first two measures and the banjo responds in the next two

measures. The second line is a repeat of the first. The first two bars of the third line are the conclusion, and the last two bars are the turnaround.

Verse (Call)		Response (Fill)	
Measure 1	Measure 2	Measure 3	Measure 4
G	C7	G	G7
I love you baby,	I'm thinking only of	you.	Yes,

Verse (Call)		Response (Fill)	
Measure 5	Measure 6	Measure 7	Measure 8
C7	C7	G	G7
I love you baby,	Thinking only of	you.	If you

Conclusion		Turnaround	
Measure 9	Measure 10	Measure 11	Measure 12
D7	C7	G	D7
Leave me, Honey,	Don't know what I'll	do.	

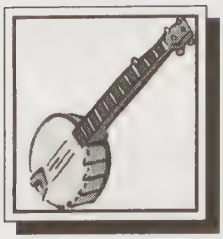
You will notice that I have written the 4 chord and the 5 chord as 7th chords. Also, it's pretty typical to make the chords in measures four and eight 7th chords. This creates a little tension to move us to the next line.

If we write those out by the numbers we have:

1	4^7	1	1^7
4^7	4^7	1	1^7
5^7	4^7	1	5^7

Example 9.6.1 Strum the 12-Bar Blues in G

Let's say we are in 4/4 time. Just to hear that typical 12-bar blues sound, strum through the progression a few times in the key of G.



9.7 Playing Examples

9.7.1 Starting on the Fourth String

Again, strumming through the 12-bar blues might seem pretty simple, but we are just starting to think about playing all chords with respect to a starting location.

If we start with a **1** chord that has its root on the fourth string, where is the root of the **4** chord? You could go up the fourth string by five frets, but even better, simply choose a form with a third string root. In that case you change forms but stay at the same fret. And the root of the **5** chord is just two frets higher on the third string. Figure 9.1 shows the relationship between root notes.

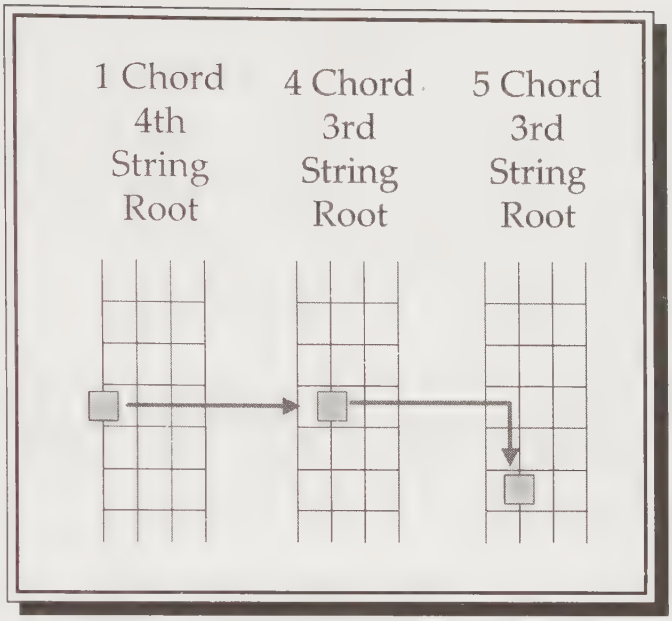


Figure 9.1 Root Notes Starting on the Fourth String

Now let's fill in complete chords based on these roots.

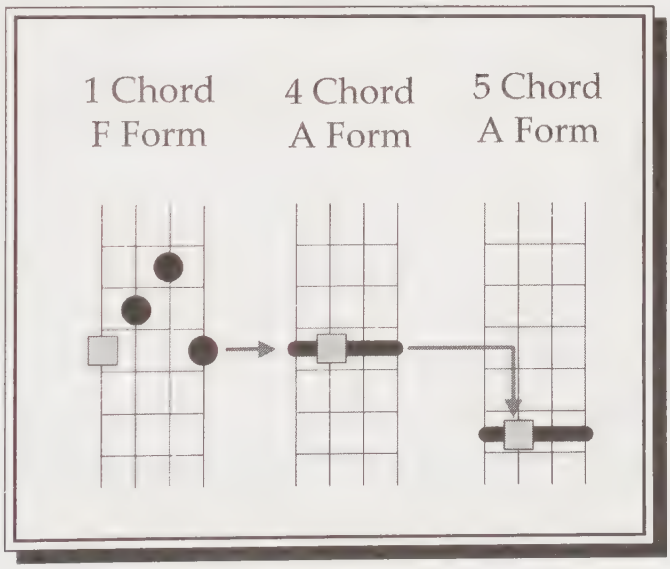


Figure 9.2 Banjo Chords Starting on the Fourth String

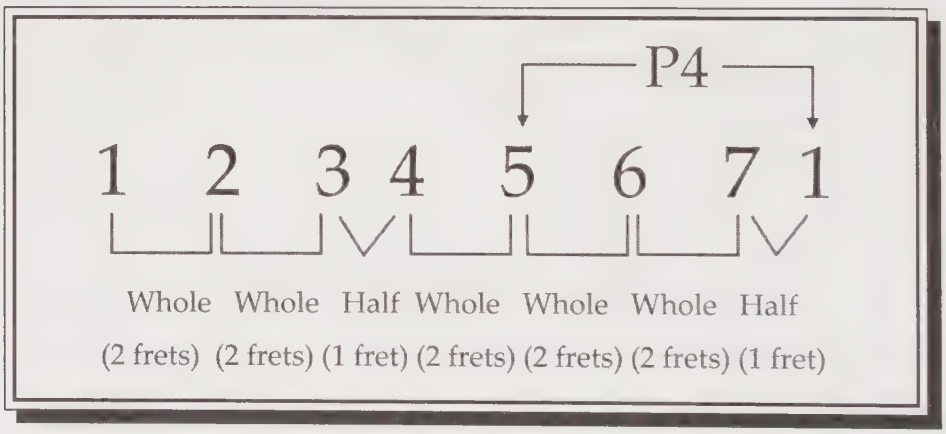
Put the root of the **1** chord on the 5th fret and strum through a 12-bar blues using these forms. Hear that familiar 12-bar sound?

You just played a 12-bar blues in the key of **G**. If you wanted to play the same blues in the key of **A** what would you do? Move the whole thing up two frets. Then your "home position" would be the 7th fret of the fourth string.

9.7.2 Starting on the Third String

You could play the same progression in the key of C using the same chord forms, but that would put you pretty high up the neck at the 10th fret. If you want to keep it in the middle of the neck, just start with the root of the **1** chord on the third string.

Now, we know the third string is a Perfect 4th higher than the fourth string. Looking at the pattern of the major scale ask yourself, "What scale tone is a Perfect 4th DOWN from the root?"



A Perfect 4th is 2 1/2 steps or 5 half steps, so if you count down from the top root where do you end up? At the 5th note of the scale! So, here's a nice approach (although not the only one) to playing off a third string root as home position.

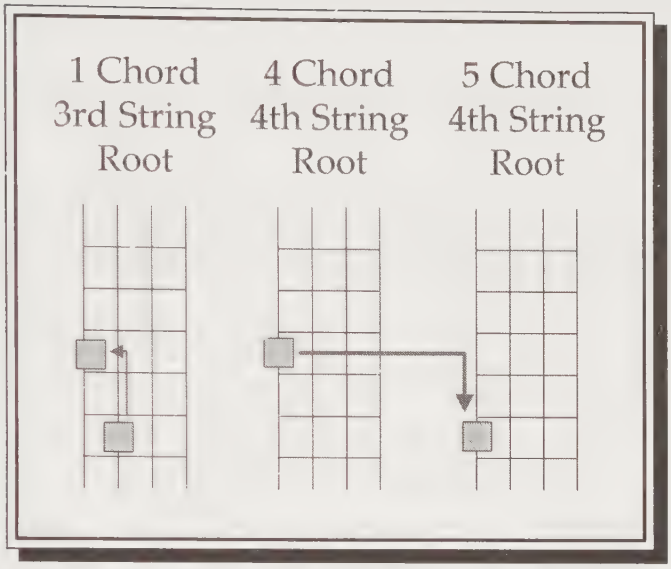


Figure 9.3 Root Notes Starting on the Third String

Figure 9.4 shows some possible chords using these roots.

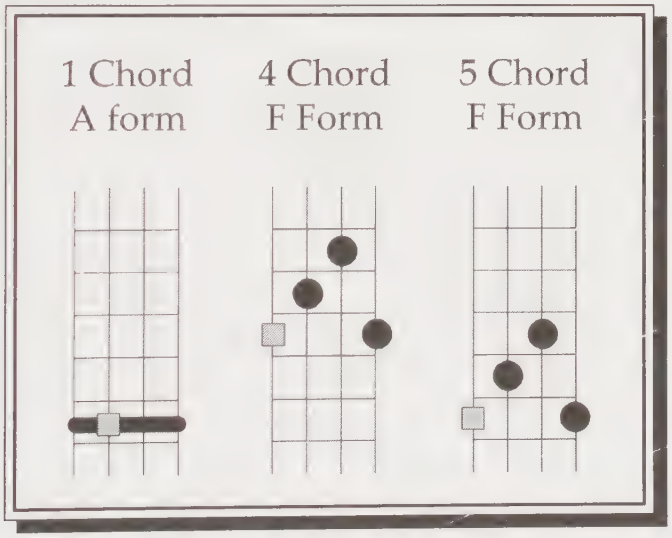


Figure 9.4 Banjo Chords Starting on the Third String

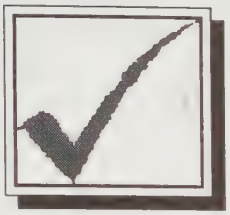
9.7.3 Try This Approach on Several Songs

Now, pick some of your favorite songs and do the following:

1. Write the chord progression out using just numbers. Remember you can still have minor chords, 7th, diminished, etc.

2. Pick a key and strum through the song at some comfortable area of the neck.

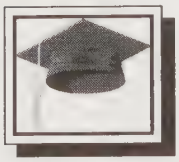
3. Move the root up or down to a new key and strum through the progression in the new key.



9.8 Review Questions for Chapter 9

1. What is one major advantage of NNS charts over standard charts?
2. In the key of C, how would you represent an Am chord?
3. From the 4 chord, what is an easy way to move to the 5 chord?
4. What is a typical progression for the 12-bar blues?
5. What is the relative major key for A minor?
6. What is the relative major key for C minor? (This is not a trick question, but think about it a little before answering).
7. For a banjo in standard tuning, if the 1 chord has its root on the third string at the 5th fret, where is the root of the 5^7 chord and what would it look like?

Chapter 10. Minor Scales and Modes



10.1 The Natural Minor Scale

Every major key has a relative minor with the same key signature. What does having the same key signature mean?

> It means they have the same notes.
> Exactly the same notes!

The **relative minor** is also known as the **natural minor**, **pure minor**, or **Aeolian scale**. The relative minor to **G major** is **E minor**. If you play only the notes of the G major scale starting and ending on **E**, you will be playing the E minor scale.

Now, here's an amazing thing. Even though you are playing exactly the same notes, the scales sound completely different! Let's try it on the banjo so you can hear the difference. Figure 10.1 on the next page shows the G major scale and the E minor scale. First play through one, and then play through the other. They sound way different, right?

How can they sound so different if we are playing the same notes? It gets back to the interval pattern.

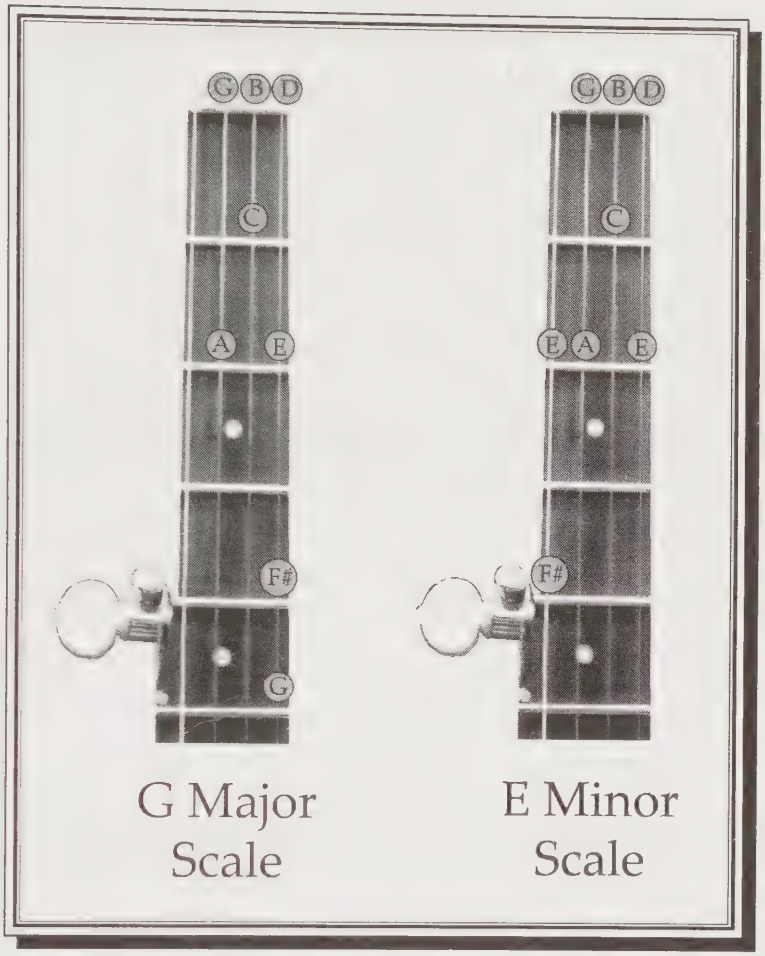


Figure 10.1 The G Major and E Minor Scales

You probably noticed that **E** is the 6th scale degree of the G major scale. That's the way it is with all major scales and their relative minors. The relative minor scale always starts and ends on the 6th scale degree of its relative major. Figure 10.2 shows another way of looking at it:

G	A	B	C	D	E	F♯	G	A	B	C	D	E	F♯	G
1	2	3	4	5	6	7	1	2	3	4	5	6	7	1
					E	F♯	G	A	B	C	D	E		

Figure 10.2 The Em Scale Starts on 6th Scale Degree of G

As shown in Figure 10.3, if you start on the sixth scale degree you end up with an interval pattern of "Whole, Half, Whole, Whole, Half, Whole, Whole."

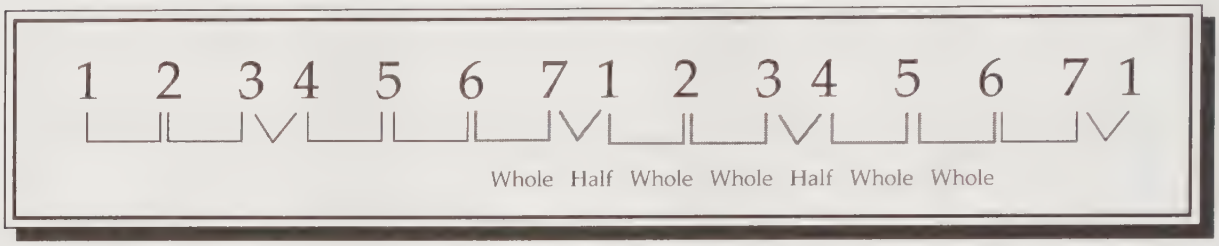


Figure 10.3 Interval Pattern for the Natural Minor Scale

With respect to the major scale with the same name (parallel major) the notes are 1, 2, ♭3, 4, 5, ♭6, ♭7, 1

For example:

E Major Scale	E	F♯	G♯	A	B	C♯	D♯	E
Scale Degree	1	2	3	4	5	6	7	1
E Natural Minor Scale	E	F#	G	A	B	C	D	E
Scale Degree	1	2	♭3	4	5	♭6	♭7	1

Figure 10.4 below summarizes the natural minor scales for all twelve keys.

Scale								Key Signature
1	2	3	4	5	6	7	1	
W	H	W	W	H	W	W		
A	B	C	D	E	F	G	A	(No sharps or flats)
E	F♯	G	A	B	C	D	E	(1 sharp)
B	C♯	D	E	F♯	G	A	B	(2 sharps)
F♯	G♯	A	B	C♯	D	E	F♯	(3 sharps)
C♯	D♯	E	F♯	G♯	A	B	C♯	(4 sharps)
G♯	A♯	B	C♯	D♯	E	F♯	G♯	(5 sharps – enharmonic to A♭)
D♯	E♯	F♯	G♯	A♯	B	C♯	D♯	(6 sharps – enharmonic to E♭)
A♯	B♯	C♯	D♯	E♯	F♯	G♯	A♯	(7 sharps – enharmonic to B♭)
D	E	F	G	A	B♭	C	D	(1 flat)
G	A	B♭	C	D	E♭	F	G	(2 flats)
C	D	E♭	F	G	A♭	B♭	C	(3 flats)
F	G	A♭	B♭	C	D♭	E♭	F	(4 flats)
B♭	C	D♭	E♭	F	G♭	A♭	B♭	(5 flats – enharmonic to A♯)
E♭	F	G♭	A♭	B♭	C♭	D♭	E♭	(6 flats – enharmonic to D♯)
A♭	B♭	C♭	D♭	E♭	F♭	G♭	A♭	(7 flats – enharmonic to G♯)

Major Scale pattern: W W H W W W H

Natural Minor scale: W H W W H W W

Harmonic Minor: W H W W H 1 ½ H (raised 7th scale degree)

Melodic Minor: WHWWWWH (raises 6th & 7th scale degrees going up, and natural minor going down)

Figure 10.4 The Natural Minor Scale in All 12 Keys

10.2 The Harmonic Minor Scale

The harmonic minor scale is pretty similar to the natural minor except it has a raised 7th degree. People like to hear that half step between the seventh note and the tonic. It gives a little more sense of closure. This gives us an interval pattern of:

W H W W H 1 ½ H (raised 7th scale degree)

With respect to its parallel major scale the notes are 1, 2, ♭3, 4, 5, ♭6, 7, 1

For example:

Major Scale	E	F♯	G♯	A	B	C♯	D♯	E
Scale Degree	1	2	3	4	5	6	7	1
Harmonic Minor Scale	E	F♯	G	A	B	C	D♯	E
Scale Degree	1	2	♭3	4	5	♭6	7	1

10.3 The Melodic Minor Scale

The melodic minor scale raises the 6th and 7th degrees going up, and is a natural minor scale going down. Therefore the ascending melodic minor scale avoids the big leap between the 6th and 7th scale degrees. This results in an ascending pattern of:

W H W W W W H (raised 6th and 7th degrees ascending)

With respect to its parallel major scale, the ascending melodic minor notes are 1, 2, ♭3, 4, 5, 6, 7, 1.

For example:

Major Scale	E	F♯	G♯	A	B	C♯	D♯	E
Scale Degree	1	2	3	4	5	6	7	1
Melodic Minor Scale	E	F♯	G	A	B	C♯	D♯	E
Scale Degree	1	2	♭3	4	5	6	7	1

This gives us a half step ascending to the tonic and a whole step leaving the tonic for a pleasant minor sound.

Pretty crazy I know, but I wanted to include these scales for your reference just in case a Martian comes down and asks you about it.

10.4 The Minor Pentatonic and Blues Scales

Who plays the blues? Everybody! (Well, almost everybody).

If there were a single scale you could play over all the changes that would sound pretty good, it would be the blues scale. Lots of people start improvising using the blues scale because it is quick and easy.

The thing that makes it good is also the thing that makes it bad. It's easy, and you can start improvising right away, but you don't want to get stuck playing just pentatonic (5-tone) stuff. There comes a point when you need to grow beyond that.

The reason a pentatonic scale (major or minor) can be played over all the chords of a simple 3-chord song is that it leaves out the notes that might sound bad. So, they're all good!

10.4.1 Interval Pattern for the Blues Scale

The **minor pentatonic scale** includes five notes 1, ♭3, 4, 5, ♭7, which creates an interval pattern of:

m3, Whole, Whole, m3, Whole

Where "m3" represents a minor 3rd or 1 1/2 steps.

When we add the ♭5 we get the **blues scale**, which consists of 1, ♭3, 4, ♭5, 5, ♭7 with an interval pattern of:

m3, Whole, Half, Half, m3, Whole

Here's an example using the G blues scale:

G Major Scale	G	A	B	C	D	E	F♯	G
Scale Degree	1	2	3	4	5	6	7	1

G Minor Pentatonic	G	B♭	C	D	F	G
Scale Degree	1	♭3	4	5	♭7	1

G Blues Scale	G	B♭	C	D♭	D	F	G
Scale Degree	1	♭3	4	♭5	5	♭7	1

10.4.4 Banjo Blues Patterns

Figure 10.5 on the next page shows the five blues scale "boxes" for the banjo. Each of these patterns represents the **G** blues scale because the tonic is on the note **G**, but these patterns are movable. You can play any blues scale depending on where you put the root. This diagram also shows how the five forms can be joined end-to-end to cover the entire fingerboard.

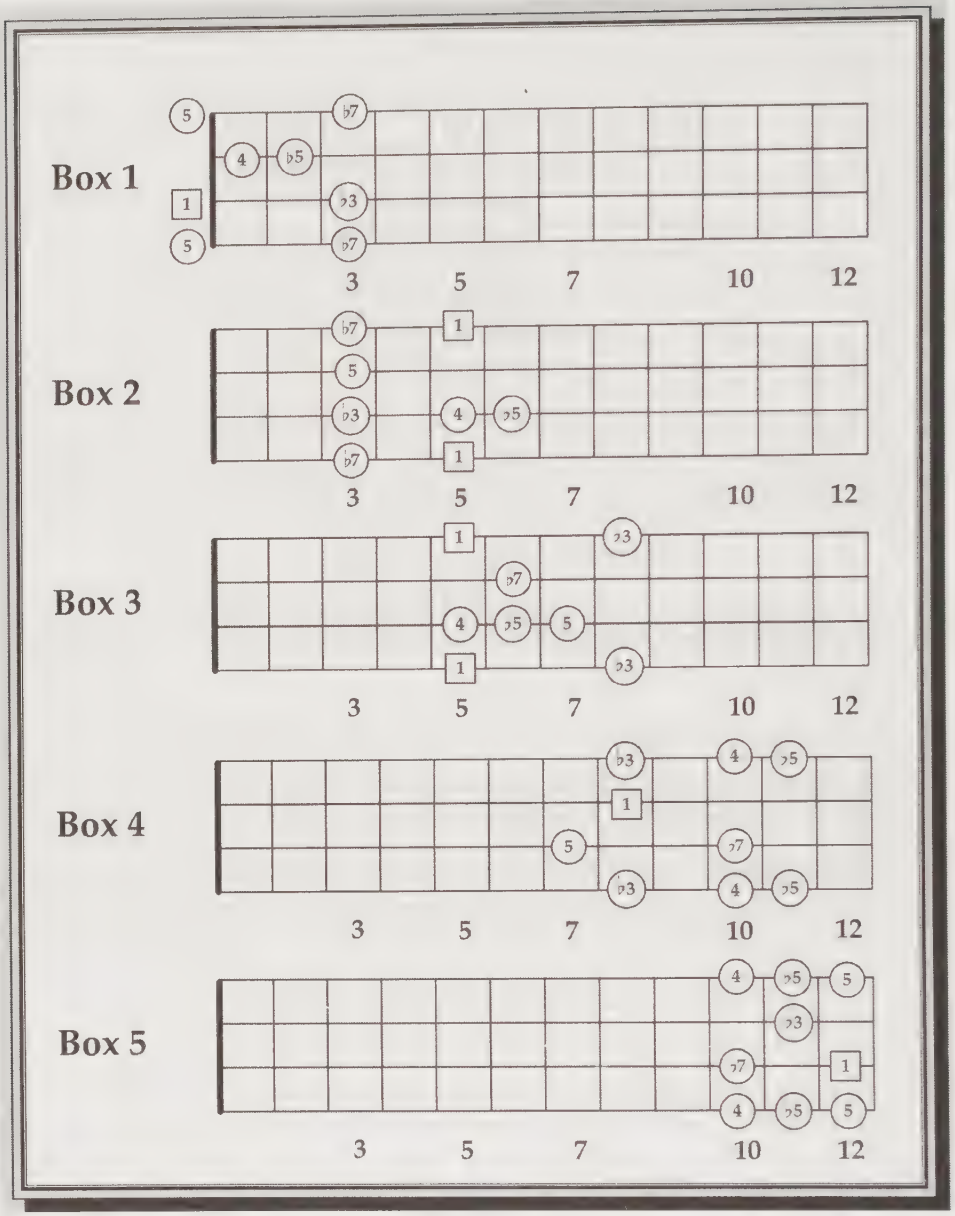


Figure 10.5 Five Blues Scale "Boxes" for Banjo

10.5 Modes

If you know about the major scale and the natural minor you already know two modes!

The major scale = The Ionian mode
The natural minor scale = The Aeolian mode

How about that!

A quick way to start thinking about modes is to play the major scale starting on each of its scale degrees. The major scale (Ionian) starts on the tonic, and the natural minor (Aeolian) starts on the 6th scale degree.

How can you generate all the others? Yea, that's right, start on each of the other scale tones! Here's a quick summary of the mode names and the scale degree of the related major scale they start on:

Scale Degree	Mode	Interval Pattern
1	Ionian (Major Scale)	WWHWWWH
2	Dorian minor	WHWWWHW
3	Phrygian minor	HWWWHWW
4	Lydian	WWWHWWH
5	Mixolydian	WWHWWHW
6	Aeolian (Natural Minor)	WHWWHWW
7	Locrian minor	HWWHWWW

Of course, you can play a mode relating to any major scale. In other words, there are more Dorian minor scales than just the **D** Dorian (related to the C major scale).

For example, if you are playing in the key of **E** and the chord progression calls for the **ii7** chord (F♯m7) you can play the **F♯ Dorian scale** which starts and ends on the second scale tone of E.

When "playing the changes" or improvising over the chord progression, you can play notes from these various scales and smooth out the transitions with guide tones that lead to the next chord.

OK, the whole subject of Voice Leading and Guide Tones is a fascinating study, but it is WAY beyond the scope of this introductory book.

If you want to dig deeper, there are lots of excellent tutorials online.

Figure 10.6 summarizes the various modes by scale degree.

Imaj7 (Ionian = Major Scale)							
Scale Degrees:	1	2	3	4	5	6	7
IIm7 (Dorian minor)							
Scale Degrees:	1	2	♭3	4	5	6	♭7
IIIm7 (Phrygian minor)							
Scale Degrees:	1	♭2	♭3	4	5	♭6	♭7
IVmaj7 (Lydian)							
Scale Degrees:	1	2	3	♯4	5	6	7
V7 (Mixolydian)							
Scale Degrees:	1	2	3	4	5	6	♭7
VIm7 (Aeolian = Natural Minor)							
Scale Degrees:	1	2	♭3	4	5	♭6	♭7
VIIm7♭5 (Locrian minor)							
Scale Degrees:	1	♭2	♭3	4	♭5	♭6	♭7

Figure 10.6 Modes of a Major Key

Back in Chapter 1 we defined the major scale as an interval pattern. We can do the same for modes. In other words, you don't have to always relate a mode to a major scale. That's just one way of looking at it.

Figure 10.7 summarizes the interval pattern for each mode. These interval patterns can be considered as definitions for the modes. Many people consider this a simpler approach.

Mode	Interval Pattern						
Ionian	W	W	H	W	W	W	H
Dorian	W	H	W	W	W	H	W
Phrygian	H	W	W	W	H	W	W
Lydian	W	W	W	H	W	W	H
Mixolydian	W	W	H	W	W	H	W
Aeolian	W	H	W	W	H	W	W
Locrian	H	W	W	H	W	W	W

Figure 10.7 Interval Patterns for Modes

10.6 Playing Examples

Let's play a few blues licks in the key of G. We will use notes from box #3 of Figure 10.5 at the 5th fret.

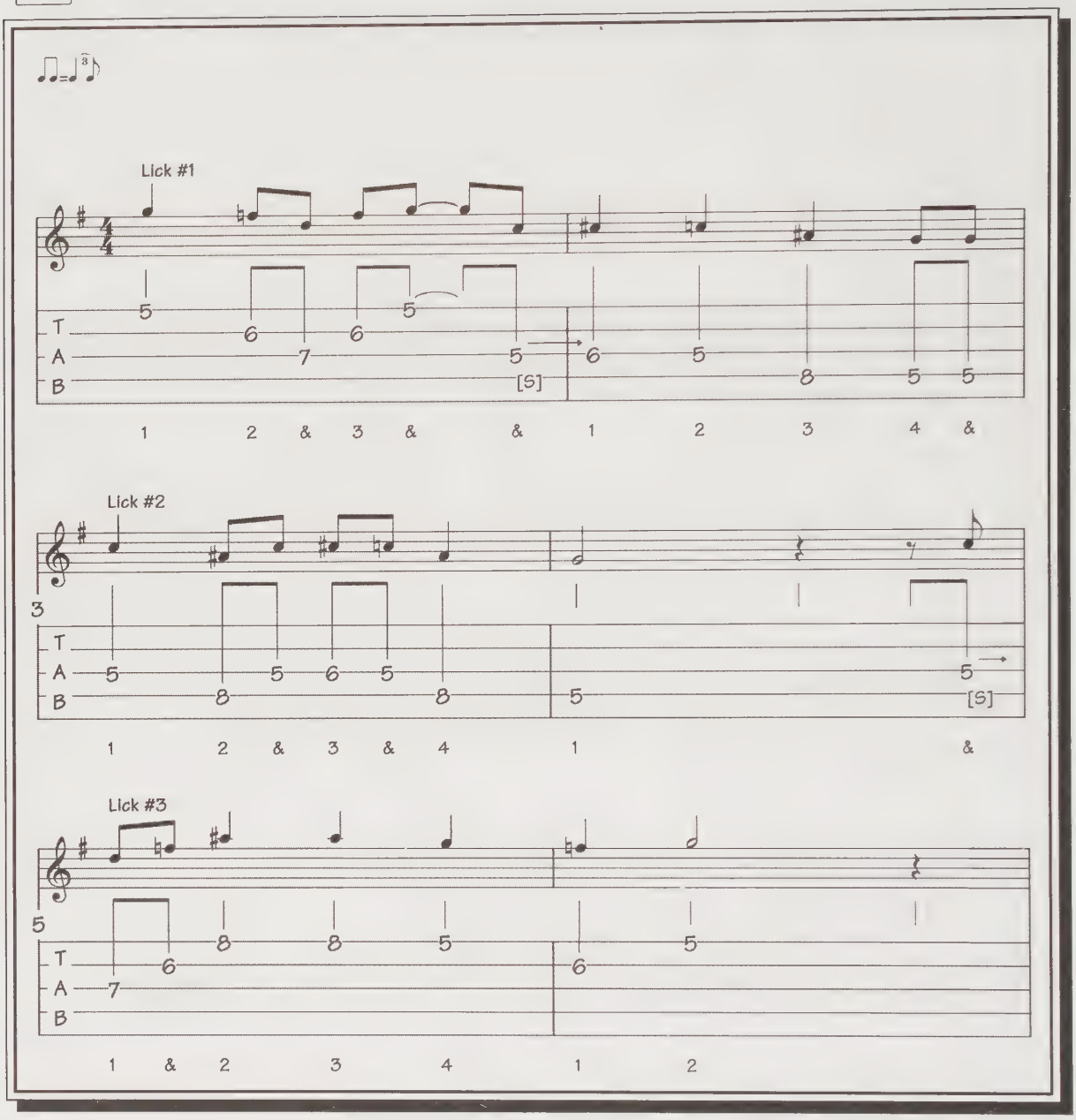
Notice in Figure 10.8 that I have put the count under the tab. Play these licks with a swing feel, and have some fun with them. Then make up a bunch of your own!

You can hear these licks on the online audio recording. Also, there are 12-bar blues mp3 tracks in the key of G to play along with.

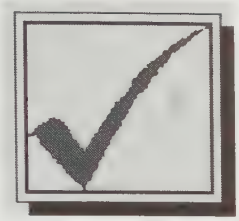
So, here's your assignment:

1. Play these three licks.
2. Play them with backing tracks, 31 - 33.
3. Make up other licks based on the blues scale in G.
4. Make up an entire 12-bar solo based on what you come up with!

I would love to hear your improvisation based on the blues scale. If you post a video, send me a link at <rmckeon5@gmail.com>.



Example 10.8 Blues Licks for the Banjo



10.7 Review Questions for Chapter 10

1. How are the **natural minor** scale and its **relative major** scale related?
2. What notes comprise the **minor pentatonic** scale?
3. What notes are included in the **blues scale**?
4. What is the interval pattern for the **Aeolian** scale?
5. What is the interval pattern for the **Mixolydian** scale?
6. Why can the same pentatonic scale be played over all the chord changes and still sound good?

Chapter 11. Answers to Review Questions

Chapter 1. The Major Scale

1. One fret on the banjo represents a half step (semitone).
2. Two frets on the banjo represent a whole step (whole tone).
3. The interval pattern for the major scale is:

Whole, Whole, Half, Whole, Whole, Whole, Half

4. The only major scale that doesn't need to be modified using sharps or flats is the C major scale.
5. The two pairs of notes that have half steps between them are B&C and E&F. All other consecutive pairs have whole steps between them.
6. The unique sound of a note based on its harmonic content is called "timbre."
7. When you produce a harmonic at the 12th fret, the string is vibrating in two segments.
8. When you produce a harmonic at the 7th fret, the string is vibrating in three segments. When you produce a harmonic at the 5th fret, the string is vibrating in four segments.
9. Your favorite banjo teacher? Of course! Rick McKeon!

Chapter 2. Reading Notation and Tablature

1. Some of the musical elements that standard notation and tablature have in common are:

Time signature
Measure lines
Repeat symbols and
Rest symbols.

2. In tablature, the horizontal lines represent the strings.
3. On the banjo, the E note on the bottom staff line is at the fourth string 2nd fret.
4. Presto means "fast"
5. Crescendo means "growing louder"

Chapter 3. Key Signatures

1. A key signature is a handy way to summarize the sharps or flats contained in a key.
2. Sharps occur in the following order:

F♯ C♯ G♯ D♯ A♯ E♯ B♯

3. Accidentals are notes that fall outside the key signature. In the score you will typically see a sharp, flat, or natural symbol in front of the note.
4. A transposing instrument is an instrument that plays the notes either higher or lower than those written.
5. The banjo is a transposing instrument, but it transpose down exactly one octave.
6. This system puts as many notes as possible on the staff so the player doesn't have to read on ledger lines way above or below the staff.

7. A440 is a standard concert pitch that many orchestras tune to. Also, the A440 tuning fork was widely used to tune the banjo before the advent of electronic tuners.
8. A440 is called A4 because it is in the 4th octave on the piano keyboard.

Chapter 4. Timing

1. The top number of a time signature tells you how many beats there are in each measure.
2. The bottom number tells you what kind of note gets one beat.
3. In 4/4 time a quarter note gets one beat.
4. In 4/4 time an eighth note gets half a beat.
5. In 3/4 time there are three beats per measure.
6. For eighth note triplets there are three notes per quarter note.
7. In 4/4 time, sixteenth notes are counted:

1 e & a, 2 e & a, 3 e & a, 4 e & a

8. In 4/4 time, you count eighth note triplets as:

1-trip-let, 2-trip-let, 3-trip-let, 4-trip-let

9. Another name for 4/4 time is "common time."
10. Another name for 2/2 time is "cut time."

Example 5.5.2 Sing the Intervals as You Play!

1 1 5 5 6 6 5, 4 4 3 3 2 2 1
5 5 4 4 3 3 2, 5 5 4 4 3 3 2
1 1 5 5 6 6 5, 4 4 3 3 2 2 1

Example 5.5.3 Sing the Note Names as You Play!

C C G G A A G, F F E E D D C
G G F F E E D, G G F F E E D
C C G G A A G, F F E E D D C

Review Questions for Chapter 5

1. A musical interval is the distance between two notes.
2. If a major interval is reduced by a half step it is called minor.
3. If a minor interval is reduced by a half step it is called diminished.
4. If a perfect interval is increased by a half step it is called augmented.
5. On a banjo in standard G tuning, the interval between the second string and the first string is a minor 3rd (m3).
6. In a major 3rd there are four half steps (two whole steps).
7. The 7th note of the major scale is one half step below the tonic (root).
8. A common song to help remember the sound of a perfect 4th (P4) is:

"Here Comes the Bride"

9. A common song to help remember the sound of a perfect 5th (P5) is:

"Twinkle, Twinkle Little Star"

Chapter 6. Chord Construction

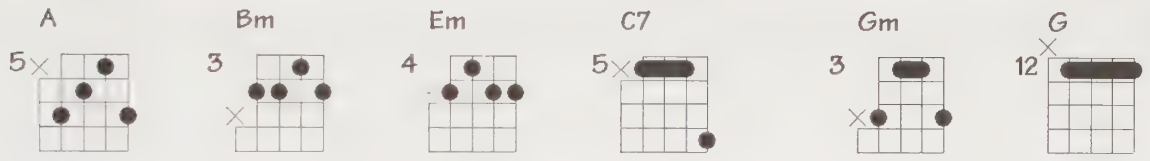
1. The basic triad is made up of the 1st, 3rd and 5th notes of the major scale that names that chord.
2. Notes that make up a chord:
   - ✓ Major = 1, 3, 5
   - ✓ Minor = 1, ♭3, 5
   - ✓ Diminished = 1, ♭3, ♭5
   - ✓ Augmented = 1, 3, ♯5
   - ✓ Major 7th = 1, 3, 5, 7
   - ✓ Dominant 7th = 1, 3, 5, ♭7
3. For an X/Y or slash chord: **X** is the chord name and **Y** is the note played in the bass.
4. For chord inversions, the following notes are in the bass:
   - ✓ Root position - Root is in the bass
   - ✓ First inversions - 3rd is in the bass
   - ✓ Second inversion - 5th is in the bass
   - ✓ Third inversion - 7th is in the bass
5. The two notes that are most influential in defining the character of a 7th chord are:
   - ✓ The 3rd tells you whether the chord is major or minor.
   - ✓ The 7th tells you whether the chord is a major 7th or a dominant 7th.

Chapter 7. Chords in a Key

1. In any major key, the 1, 4 and 5 chords are major.
2. In any major key the 2, 3 and 6 chords are minor.
3. In any major key the 7 chord is diminished.
4. In terms of stacked thirds, a M3 with a m3 above it is major.
5. In terms of stacked thirds, a m3 with a M3 above it is minor.
6. In terms of stacked thirds, a m3 with a m3 above it is diminished.
7. In terms of stacked thirds, a M3 with a M3 above it is augmented.

Chapter 8. Movable Chords

8.4 Playing Examples



1 2 3 4 5 6

8.5 Review Questions

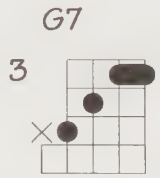
1. A movable chord is one that maintains its form as you move it to a new location. This is true because you are fretting all of the necessary strings. If you have to give up fretting one or more strings in the new location, just don't play those strings.
2. Because the relationship between fretted notes has not changed, the chord quality has not changed, and the root is still on the same string. The name of the chord in the new position is the note under the finger fretting the root.
3. To make a D♭ chord using a bar, place it at the 6th fret.
4. The root of the F form is on the fourth string. You would place the root note on the 7th fret to make an A chord.

Chapter 9. The Nashville Number System

1. A major advantage of the Nashville Number System is that the same chart can be used in any key.
2. In the key of C, you would represent an Am chord as "6-"
3. From the 4 chord an easy way to play the 5 chord is to simply move the form up a whole step (2 frets).
4. A typical 12-bar blues progression is as follows:

1	4	1	1
4	4	1	1
5^7	4	1	5^7

5. The relative major for A minor is C major.
6. The relative major for C minor is E♭ major.
7. For the banjo in standard tuning, if the 1 chord has its root on the third string (A form) at the 5th fret, the 5^7 will have its root on the fourth string (F form) at the same fret and look like this:



Chapter 10. Minor Scales and Modes

1. The natural minor scale and its relative major have the same key signature. This means they have the same notes.

2. The minor pentatonic scale consists of:

1, ♭3, 4, 5, ♭7, 1

3. For the blues scale we add the ♭5 to the minor pentatonic scale. So the notes for the blues scale are:

1, ♭3, 4, ♭5, 5, ♭7, 1

4. The interval pattern for the Aeolian scale is:

W H W W H W W

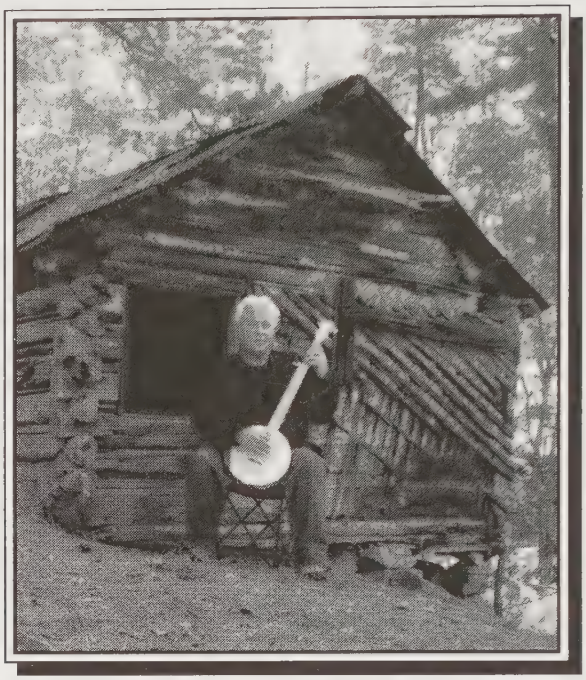
5. The interval pattern for the Mixolydian scale is:

W W H W W H W

The Mixolydian scale is just the major scale with a flatted 7th.

6. The same pentatonic scale can be played over all the chord changes in a simple three-chord song because all the notes that might sound "bad" are left out.

Meet the Author



Hi, I'm Rick McKeon. I am currently living in beautiful Prescott, Arizona. Since retiring, I have been spending time pursuing my passions for writing, playing music and teaching, and producing a series books on music, nature and science.

Some of my other pursuits include: hiking, treasure hunting, exploring old ghost towns and mines, recreational mathematics, photography, and experimenting with microcontrollers.

For more about these activities visit my website at rickmckeon.com.

Your comments are always welcome. Send me an email at <rmckeon5@gmail.com>.

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ABOUT THIS BOOK

Basic Music Theory for Banjo Players

Illustrated with Playing Examples for the 5-String Banjo

By Rick McKeon

This book is a "hands-on" approach to music theory with lots of playing examples for the banjo. Music theory does not have to be mysterious or difficult. In fact, taken a little bit at a time, it's easy and fun! Each of the approximately 50 lessons in this book has a limited scope, but by the time you complete them, you will have a thorough understanding of the basics of music theory as applied to the banjo. While a single book can't cover everything in so vast a subject, the author has tried to choose topics that will address the needs of most beginning banjo players. These include: scale theory, reading tablature and standard notation, key signatures, accidentals, transposition, time signatures and note values, intervals and chord construction, the three kinds of minor scales, pentatonic scales, and more. In addition, each chapter features playing examples and review questions to both test and clarify understanding of the materials presented. Rather than proceeding from chapter to chapter, as each individual banjo player is likely at a different point in their musical journey, the reader is encouraged to "jump around and spend more time in those areas that interest you most." The important thing about the journey is to begin. Includes access to online audio and video.

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